

# Transportation Panel Survey

2014 FINAL REPORT



MAY 2015

Submitted to:



Submitted by:



**CH2MHILL®**

in Association with



MUSTEL GROUP

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*Final Report*

# 2014 Transportation Panel Survey

Prepared for  
**City of Vancouver**

May 2015

**CH2MHILL®**

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# Executive Summary

This report summarizes the results of the City of Vancouver's second annual transportation panel survey conducted in 2014. The transportation panel survey will help to track progress towards transportation mode share targets and will be a means of assessing the vehicle-kilometres travelled by the City's residents. These two areas are both associated with specific targets outlined in the City of Vancouver's Greenest City Action Plan and Transportation 2040. As this survey tracks the travel characteristics of the same group from year to year it will also be helpful in determining what transportation investments and policies have been the most effective in helping to provide walk/bike/transit travel options for Vancouver residents.

The primary component of this survey is a travel diary where individuals who take the survey record the trips that they make on a given day. This data was compared to the 2013 Panel Survey, which followed similar design, recruitment, and analysis methodologies. It should be noted that as this is only the second year of the panel survey there were some changes to the travel diary and to some of the demographic questions that may slightly change the results from 2013. These are explained in more detail within the report but are summarized as follows;

- 1) In the 2013 survey people were asked not to record recreational trips. However some people may have recorded some of these trips. In the 2014 survey there was an explicit category for recreational trips so there is more confidence that any recorded recreational trips were coded in this category. The result is that some areas could have a slightly lower number of walk or bike trips in 2014 than in 2013.
- 2) In the 2013 survey there was one question that was asked relating to whether someone was a regular or occasional cyclist. In the 2014 survey three questions were asked in order to better categorize how often people cycle. Due to the different way the question was asked they cannot be directly compared. The 2014 survey is a better reflection of the frequency and types of routes that people would cycle.

Even with the slight differences in how the survey was undertaken and a slightly larger city population size, the 2014 Panel Survey results are quite similar to the 2013 results

In the inaugural year, a higher number of trips were recorded in the Panel Survey compared to TransLink's trip diary survey, particularly for walking. This is likely due to the survey method where the Panel Survey is based on individual reporting as opposed to household reporting. The household reporting tends to under report discretionary trips. In 2014, following the same methodology, there was an observed drop in trip rate, from 3.9 to 3.7 trips which is likely due to the change in recording recreational trips as described above.

2014 is the first year in which direct comparisons can be made between successive panel surveys following the same methodology. However, there was a higher than expected rate of attrition amongst 2013 panel members, with only 1,495 of 2,517 returning to join the 2014 Panel. This needs to be kept in mind while reviewing the changes to mode share and VKT. Some key findings from this data include:

- 1) Percentage of people travelling by walk/ bike/ transit increased from 47.6% to 49.7%<sup>1</sup> which is on track to pass the target<sup>2</sup> before 2020.
- 2) Cycling had the largest increase in trips with walking and transit remaining relatively constant.
- 3) Benchmarking vehicle kilometres travelled per capita using the AirCare database indicates that the target of 20% reduction from 2007 levels was reached in 2014 with a 21% reduction.

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<sup>1</sup> Note that these values represent the midpoint of the walk/ bike/ transit mode shares based on the 95% confidence interval ranges. These are discussed in more detail in Section 4.2.

<sup>2</sup> The Transportation 2040 plan target is that by 2020 at least half of all trips are by walking, biking or transit.

- 4) Moving forward using odometer readings from panel survey respondents appears to be a reliable method to measure VKT per capita.
- 5) Car sharing has significantly increased in 2014 with 20% of residents having a car share membership, up from 13% in 2013.

The next panel survey will be undertaken in the fall of 2015 and at this point more commentary could be included on trends with a third year of data with the same methodology.





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A	2014 Panel Survey Instrument
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# 1. Introduction

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Vancouver is recognized as one of the most livable cities in the world, due in no small part to the way in which the built environment respects and magnifies its natural surroundings. This delicate balance is put under pressure as the City grows to accommodate new residents and businesses. The Greenest City Action Plan and Transportation 2040 offer appealing visions of how the City of Vancouver's (the City's) transportation network plays a key role in shaping the future growth of the City.

In many respects, that vision is already taking shape, with the shifting live-work balance on the downtown peninsula supporting a greater number of trips by walking, cycling, and transit. The launch of the Canada Line and the 2010 Winter Olympic Games were a proving ground for demonstrating the latent demand for walk/bike/transit modes of transportation. The City's commitment to protected bike lanes and transit oriented development has also gone a long way to support more walk/bike/transit modes of transport.

To build off of these successes and to plan infrastructure that can get the largest gains in the percentage of people walking, cycling and taking transit and reductions in vehicle-kilometres travelled (VKT), it is critical to track the effectiveness of different initiatives as well as market conditions on changing travel behaviour. Beyond the City's current data sources including screenline traffic counts, permanent bike counters, and TransLink's Regional Trip Diary Survey, a Panel Survey is one of the best tools to capture such trends.

The City's role in transportation includes: building and maintaining infrastructure; shaping land use through guidelines and policies; managing demand through regulations and pricing; collaborating with adjacent communities and senior levels of government; and educating citizens.

The ability to track changes in mode share and VKT will take on even greater significance if the Vision articulated by the Mayor's Council on Regional Transportation comes to pass, following the 2015 Metro Vancouver Transportation and Transit Plebiscite this spring.

This is the second year of the City of Vancouver's annual panel survey. This survey is intended to be used to benchmark progress towards Greenest City and Transportation 2040 targets. Each year the survey is being refined to include other metrics related to health, propensity travel by active transportation modes and reasons for shifting travel patterns.

## 1.1 Purpose

A panel of Vancouver residents is recruited to serve in the ongoing annual transportation panel. The Panel Survey is a one-day personal travel diary covering weekday trips by any mode or purpose of travel that captures accompanying household and personal demographic information. This excludes commercial driver trips, such as those driving trucks, buses, and taxis.

The objectives of the Panel Survey are to:

- a) Assess the travel mode share and number of trips for nine transportation zones in the City;
- b) Assess the average vehicle-kilometres travelled by City residents; and
- c) Determine factors that have contributed to changes in travel behaviour and travel patterns.

The 2013 Panel Survey established a benchmark of travel behaviour in the City, against which the 2014 Panel (and all future panel data) will be compared, allowing the City to accurately capture trends in the key parameters of total trips, mode share, and distance driven. Over time, the City can then be better positioned to determine which of its policies and projects have resulted in the desired changes in travel behaviour. This survey approach is unique to previous regional travel surveys in that this survey will aim to measure relative annual change in travel behaviour amongst a group of panel members (i.e. a longitudinal survey) rather than comparing results of a new random sample of households every three to five years such as TransLink's Regional Trip Diary Survey. It is anticipated that 2- 3 survey periods would need to be undertaken to start drawing conclusive evidence of mode share change, reasons for mode shift and vehicle kilometres-travelled. The panel survey will also be benchmarked against regional trip diary surveys and the commute to work Census survey that occur approximately every 5 years.

The 2014 survey also developed a strategy and benchmark for vehicle kilometres travelled.

## 1.2 Sustainability

Shifting mode share to active forms of transportation, including walking, cycling, and access to transit services, yields not only environmental, but also socio-economic benefits including the following:

- Climate change mitigation through reductions in fossil fuel usage and associated greenhouse gas (GHG) emissions;
- Avoided vehicle operating costs, collision costs, etc.
- Health benefits associated with:
  - Incorporating physical activity into daily routines;
  - Localized reductions in Criteria Air Contaminants (CACs);
- Enhanced community livability when taking into account:
  - Social connectedness – residents more engaged within their own neighbourhoods
  - Improved security – following Crime Prevention Through Environmental Design (CPTED) principles – due to greater use of the public realm;
  - Avoided transportation costs into the housing affordability equation.
- Postponement of investments in infrastructure renewal due to lesser demand, which can be redirected to more pressing City needs.

Collecting trend data on these key areas provides evidence to support ongoing policy refinement and level of capital investment for walk/bike/transit modes as the City works towards its Transport 2040 targets.

## 1.3 Structure of the Report

This report is organized into six main sections as follows:

1. **Introduction** – This section provides the context and outlines the goals of the study.
2. **Survey Methodology** – This section describes the survey instrument and the process used to recruit the panel. It also explains the weighting and expansion of the panel to be statistically representative.
3. **Panel Characteristics** – This section corresponds to the 'Person File' in the survey data, and includes general demographic information on age, gender, and household income of Panel members. This section also provides a summary of vehicle ownership, car-sharing, transit, and cycling tendencies.

4. **Trip Characteristics** – This section corresponds to the ‘Trip File’ in the survey data and features the bulk of the analytical work in the report: comparing the Panel Survey results with TransLink’s 2011 Regional Trip Diary survey data.
5. **Comparison of Returning Panelists** – This section provides a comparative analysis of the characteristics and travel behaviour of 2013 panelists who participated in the 2014 Panel.
6. **Comparison to Talk Vancouver Panel** – This section provides a comparative analysis of Talk Vancouver panel characteristics and travel behaviour between 2013 and 2014.
7. **Factors Affecting Growth** – This section provides high-level commentary on external and likely contributing factors that affect mode share and VKT.
8. **Lessons Learned and Next Steps** – This section highlights general themes from the inaugural Panel Survey, and lays out the work program over the coming months leading up to the 2015 Panel Survey.





## 2. Survey Methodology

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### 2.1 Survey Instrument

The survey instrument utilized in the 2013 Panel Survey was developed to focus on the City's objectives of tracking mode share, vehicle-kilometres travelled (VKT), and other key parameters. The survey was designed in collaboration with City staff and market research experts. The resulting survey instrument sought general structural alignment with TransLink's Regional Trip Diary Survey and was designed to be robust so that minimal changes would be required in future years.

In 2014, modifications were made to the survey instrument to clarify elements that were previously found to be vague. Most changes reflect a desire on the part of the City to gain a better understanding of the emerging car sharing sector, preferences by people cycling, and bike/vehicle parking trends. It also introduces a question that delves into social interactions during trip making and health related metrics. More in-depth questions were contemplated during the process of updating the survey instrument. In the interest of brevity and minimizing participant fatigue, some of these were tabled for possible inclusion in future years. It is expected that this process will be revisited every year, as guided by socio-political and technological changes.

As in the 2013 survey, 2014 participants were entered into a random draw – winners received passes to City facilities and attractions – to incentivize participation while not biasing outcomes. Prizes were updated to try to appeal to the previously underrepresented young age cohorts.

Residents were recruited by the following methods: in 2013, random probability telephone sampling was conducted by Mustel Group and email invitations were sent by the City to Talk Vancouver's online panelists. For the telephone method, Mustel Group conducted random probability sampling to best reflect the population demographics in the nine transportation zones. A parallel survey was conducted among the City's Talk Vancouver panel, an opt-in online panel began by the City of Vancouver in the fall of 2013 using a variety of recruitment efforts.

In 2014, residents that completed the required 2013 study components (both Mustel random sample and Talk Vancouver) were invited via email to participate in the study. Next, to address the attrition in the 2013 random sample, Mustel Group conducted telephone recruitment by continuing random selection of gender but focusing on residents 15-34 years of age and in specific transportation zones (demographics that were below target in the 2013 wave). In addition, with the knowledge that all existing landline sample in CBD-False Creek had been contacted in 2013 (one of the zones below target), 2,000 post card invitations were mailed to residents in this area. As for attrition in the returning Talk Vancouver sample, this was addressed with email invitations by the City to newly recruited Talk Vancouver panelists. The randomly selected Mustel recruits are analyzed separately from the voluntary Talk Vancouver panel.

The survey had two main components a "person component" and a "trip component".

In the person component of the questionnaire, the participants were asked to provide the following, as applicable to assist in expansion of the data and obtain general transportation characteristics:

- Demographic information (age, gender, employment, household income, ethnicity)
- Home and work addresses
- Degree of access to different modes of transportation (private vehicle, car-share, bicycle, transit)
- Usual travel habits

In the trip component, participants were required to provide the following details for all trips made during their assigned reporting day, which is used to estimate trip characteristics for the City including:

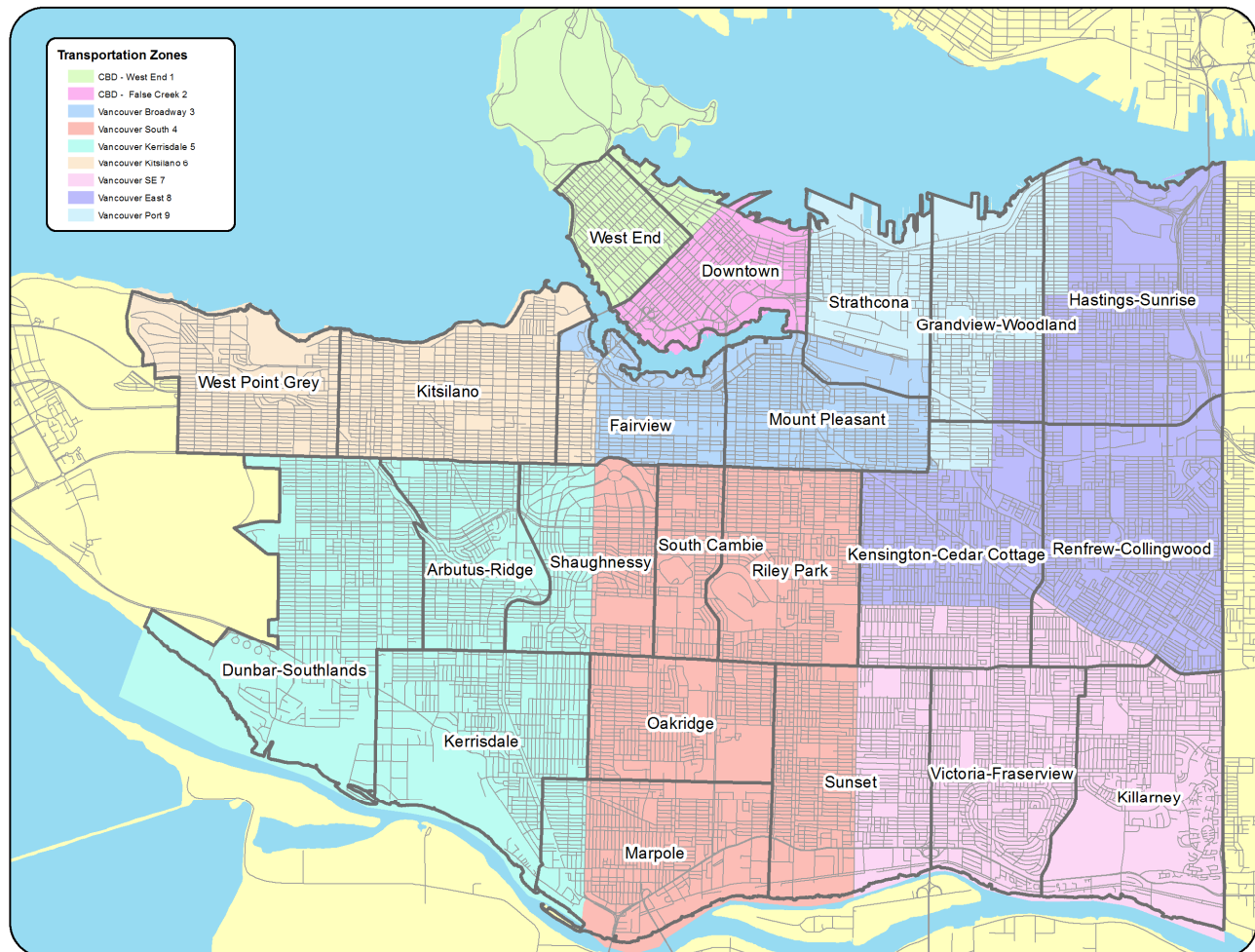
- Start/end location
- Time of day
- Purpose of trip
- Mode of transportation
- Odometer readings (for those who reported driving trips)

The complete survey instrument, for both returning panelists and new recruits, is included in [Appendix A](#).

## 2.2 Data Collection and Sampling

The sampling strategy was designed to recruit a longitudinal panel representative of residents across Vancouver's nine sub-areas (referred to as transportation zones from here-on) that have also been used in TransLink's trip diary survey. [Exhibit 2-1](#) shows how Vancouver's nine transportation zones relate to the 22 neighbourhood areas within the city.

*Exhibit 2-1 - Transportation Zones and Neighbourhood Zones in Vancouver*



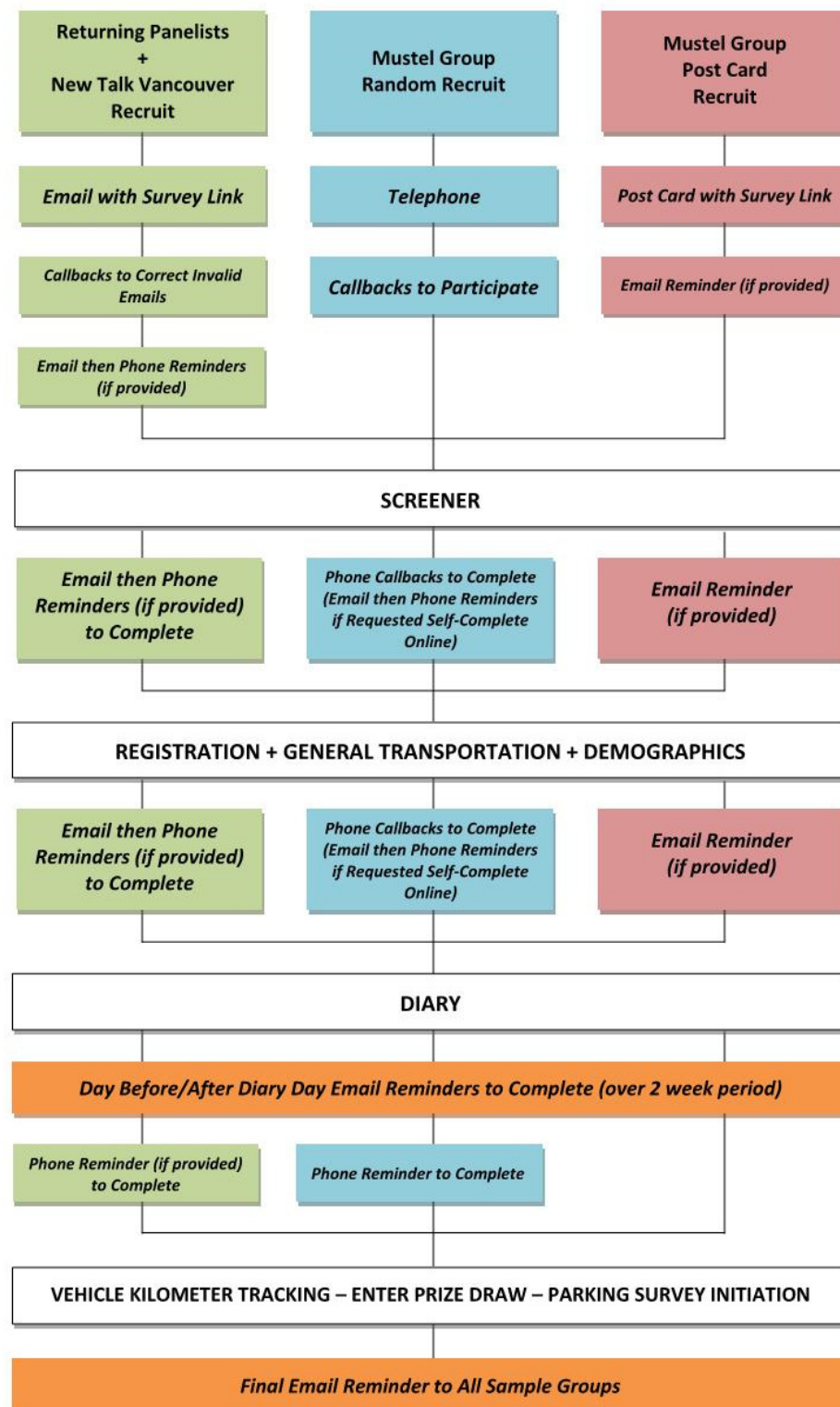
**Exhibit 2-2** shows proportionate sampling targets for the estimated 2014 population (based on a projection of 2011 Census data) required to achieve a representative total of 2,500 residents, excluding any recruiting efforts for the Talk Vancouver panel which was recruited separately. Similar to the 2013 survey the panel only included people 15 years and above. The total estimated 15+ population from the 2011 Census is approximately 525,150. Of the population 15+, a 0.5% random sample of residents was achieved, similar to the 2013 Panel Survey, and previous trip diary surveys which instead use the household as the sampling unit.

**Exhibit 2-2** – Trip Diary Targets By Transportation Zone (Population 15+)

	Transportation Zone	2014 Census Data			Proportionate Sample
		Total Population	Population 15+	Proportion 15+	
1	CBD – West End	59,696	56,854	10.8%	271
2	CBD – False Creek	60,204	56,625	10.8%	270
3	Vancouver Broadway	57,462	52,580	10.0%	250
4	Vancouver South	80,884	69,522	13.2%	331
5	Vancouver Kerrisdale	60,814	51,273	9.8%	244
6	Vancouver Kitsilano	61,011	54,700	10.4%	260
7	Vancouver SE	81,183	69,077	13.2%	329
8	Vancouver East	92,804	79,428	15.1%	378
9	Vancouver Port	39,283	35,034	6.7%	167
<b>Total</b>		<b>593,341</b>	<b>525,093</b>		<b>2,500</b>

The panel recruitment process, illustrated in the flow chart in

*Exhibit 2-3*, began in early October 2014 once fall travel patterns had stabilized. The recruitment process continued throughout the fall, with a substantial portion of recruits registering in November, and to a lesser degree in the first week of December.

**Exhibit 2-3 – Panel Survey Flow Chart**



In 2014, due to delays in finalizing and programming new questions added to the survey, email invitations to 2013 survey panelists and post card mailings to new residents in CBD False-Creek occurred in the late October. Telephone recruitment to replenish randomly recruited panelists lost to attrition began in early November, along with reminder calls to returning panelists in an attempt to offset attrition in the returning panelist sample. In the end, the attrition rate came in at 41%, substantially higher than predicted. Continued challenges in recruiting the 18-34 age cohort as well as residents in transportation zones below target necessitated randomly recruiting all age groups in all zones as well as extending recruitment and reminder efforts. In order to reach the overall target of 2,500 trip diaries, recruitment and reminders continued up to December 19th, and then resumed to a lesser degree from January 5th to 16th. In the future it would be preferable to undertake the survey slightly earlier to capture more surveys in late September and October which are more representative of typical travel patterns. Trip making tends to change in December as people prepare for the holiday season.

As indicated earlier, Mustel Group recruited panel participants using a random probability sampling method. The panel characteristics (e.g., age, gender) were closely monitored during recruitment. For the random probability sampling, Mustel Group's sample frame consisted of: i) published landlines stratified by the City's nine transportation zone designations, and ii) random-digit generated cell phone numbers within City of Vancouver rate centres.

Specific methods to reach out to previously underrepresented geographies and age groups are as follows:

#### **Cell Phone Sample**

The random-digit cell phone sample enables expanded coverage to include residents without landlines. While the published landline sample was pre-tagged by zone, the cell phone sample can only be tagged by zone after the interview. City residency and the geographic zone was confirmed for all respondents during the interview process. Within selected households, respondents were chosen at random (e.g., next birthday) or targeted by age/gender as required.

Of the total diaries completed by those within the 15-34 age cohort, 50% were recruited via cell phone sample, compared to only 9% via landline. Cell phone sampling will be an ongoing and increasing requirement, especially in contacting the 15-34 age cohort, and considering the incidence of landlines is expected to decrease over time.

#### **Post Card Invitation**

Sample for CBD False-Creek invitation by postcard was produced using the ABD, or Address Based Dwelling database developed by SM Research (Sampling, Modelling & Research Technologies Inc., the firm specializing in database listings which also provided all landline and cell sample for telephone survey recruitment). The ABD database merges and purges historical and newly registered landline records to arrive at address only listings.

There were only 14 completed diaries out of the 2,000 postcards mailed out. It is recommended that this method be excluded from future surveys.

#### **Incentives**

Incentives in general play a role, but while some of the population appreciate the types offered by the City, any given incentive will not necessarily appeal to all. It is difficult for us to tell how much of a role this has played, as survey length has increased from 2013 to 2014. Of note, 93% of all 2013 participants elected to enter the incentive draw. This dipped to 88% in 2014, even though a specific prize type was offered – PNE PlayLand Pass – that was more oriented to younger groups.

Monetary or retail-oriented incentives have proven to be more effective with similar surveys.

Travel days for recording of trips were assigned at random with a goal to equalize the days of the week (Monday to Friday, as required).

Highlights from the recruiting sample include the following:

- A total of **3,071** respondents completed the trip diary, **2,533** from Mustel's telephone recruitment (of which approximately 15 respondents were aged between 15 and 17) and **538** from the Talk Vancouver panel, which grew substantially in 2014. [Exhibit 2-4](#) presents a breakdown of these respondents by geographic sub-area. The target figures show the number of samples required in order to match the proportions from the census. [Exhibit 2-5](#) shows the geographic distribution of the panel members and Talk Vancouver members.
- **56%** of respondents were female, **44%** were male, in both the random sample and Talk Vancouver panels.
- **1,883** respondents had access to a private vehicle in the random sample, though only **1,697 (90%)** entered an odometer reading for their vehicle. Amongst the Talk Vancouver panel, **116** respondents had access to a private vehicle, though only **77 (63%)** entered an odometer reading for their vehicle.

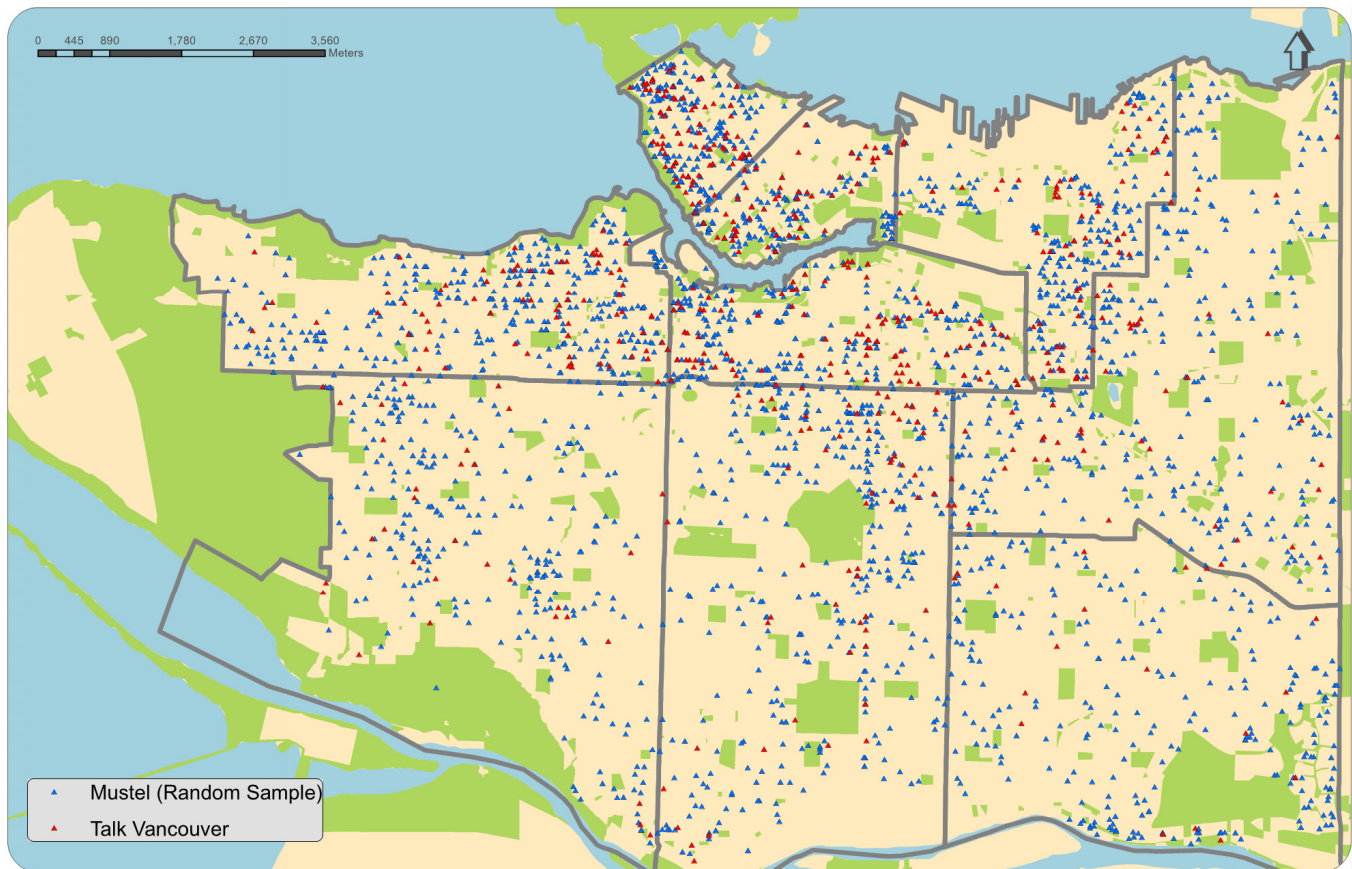
**Exhibit 2-4 – Completed Trip Diaries by Transportation Zone**

	Transportation Zone	Mustel	Target	$\Delta$ Target	% Difference	Talk Vancouver	Mustel + Talk Vancouver
1	CBD – West End	242	271	-29	-11%	79	321
2	CBD – False Creek	191	270	-79	-29%	56	247
3	Vancouver Broadway	283	250	33	13%	101	384
4	Vancouver South	362	331	31	9%	64	426
5	Vancouver Kerrisdale	272	244	28	11%	33	305
6	Vancouver Kitsilano	340	260	80	31%	74	414
7	Vancouver SE	265	329	-64	-19%	19	284
8	Vancouver East	333	378	-45	-12%	44	377
9	Vancouver Port	245	167	78	47%	68	313
	<b>Total</b>	<b>2,533</b>	<b>2,500</b>	<b>33</b>	<b>0%</b>	<b>538</b>	<b>3,071</b>

[Exhibit 2-3](#) shows that some of the transportation zones were over sampled and some were under sampled. More samples provides a more statistically reliable dataset and a lower sample can compromise the confidence levels in reported data. As in 2013, it was difficult to recruit panel members from the CBD-False Creek area and, as such, results for this area were combined with the CBD-West End to provide combined results for downtown. Some caution should be exercised when interpreting findings for the CBD-False Creek area. Confidence levels are dependent on the variable that is being measured. Section 4.2 provides a summary of the confidence levels of the reported mode shares by transportation zone which provides an assessment of the reliability of the data for tracking travel patterns.

**Exhibit 2-4** shows the distribution of participating panel members and Talk Vancouver members. As shown, the Talk Vancouver sample tends to be more focused around the Metro Core area of Vancouver while the Mustel sample is more evenly distributed. Travel patterns, as further discussed in Section 4, vary significantly depending on which neighbourhood is being sampled.

**Exhibit 2-5 – Geographic Distribution of Panel Members**



## 2.3 Survey Weighting and Expansion

The final survey data for the random sample only was expanded to the population of City of Vancouver residents aged 15+. The Talk Vancouver sample was not aggregated into the randomly recruited sample so that it could be assessed to determine if it had similar characteristics to the randomly recruited sample and might be able to be used to supplement the panel in the future.

A firm specializing in sampling, mapping and census information, SM Research (Sampling, Modelling & Research Technologies Inc.), the firm that also provided the sample for survey recruitment, developed demographic projections for 2014 based on 2011 Census Data. Population forecasts were derived from the 2011 Census base population data by projecting change over the period 2011 to 2014 across a number of key demographic factors. The factors taken into account included birth rate, death rate, immigration and emigration for each age grouping within gender within the City's transportation zones. The factor changes were applied on a year-by-year basis to reach the final projections for 2014.

The travel survey represents 0.48 percent of the study area population (2,533 respondents out of 525,093 City of Vancouver residents over 15 years of age). As the data collected from this benchmark study is intended for transportation planning and forecasting purposes, this information must be expanded to the survey universe, that is, the total number of City of Vancouver residents of the same age group (15+).

To ensure a statistically representative sample, the weighting and expansion factors developed for the person and trip data collected in the COV Pavel Survey in 2014 matched known demographic characteristics for City of Vancouver transportation zones as well as age within gender groups.

### 2.3.1 Person Expansion

For the person data collected, the random survey sample was expanded on the basis of age categories within gender as well as within the City of Vancouver's geographic transportation zones. Note that although there are nine such zones in the City, due to limited sampling in geographic zone 2 (CBD – False Creek), this zone was combined with zone 1 (CBD West End) and treated as one to represent Downtown Vancouver in the expansion process.<sup>3</sup>

With eight transportation zones and three age categories (15 to 34, 35 to 54 and 55 and over) within the two genders, this yielded a total of 48 weight expansion categories initially, plus additional expansion cells were included for respondents who refused age. Records with age refusal were represented as their actual proportion within the corresponding zone and gender. The number of age refusal records is very low at only 19 out of a total of 2,533 persons (<1%). As a result, the age refusal expansion process has little to no overall effect on the age distribution. [Exhibit 2-6](#) shows the actual survey sample age and gender distribution prior to weighting. Compared to 2013, there is a smaller proportion of participants in the 35-54 age cohort.

[Exhibit 2-7](#) shows the City's 2014 population estimates based on 2011 Census Data.

[Exhibit 2-6](#) – Panel Survey Age and Gender Distribution

Gender	15-34	35-54	55+	Total
Male	4.7%	15.7%	25.4%	45.8%
Female	5.5%	19.8%	28.9%	54.2%
<b>Total</b>	<b>10.2%</b>	<b>35.5%</b>	<b>54.3%</b>	<b>100.0%</b>

[Exhibit 2-7](#) – 2014 Demographic Projections (based on 2011 Census)

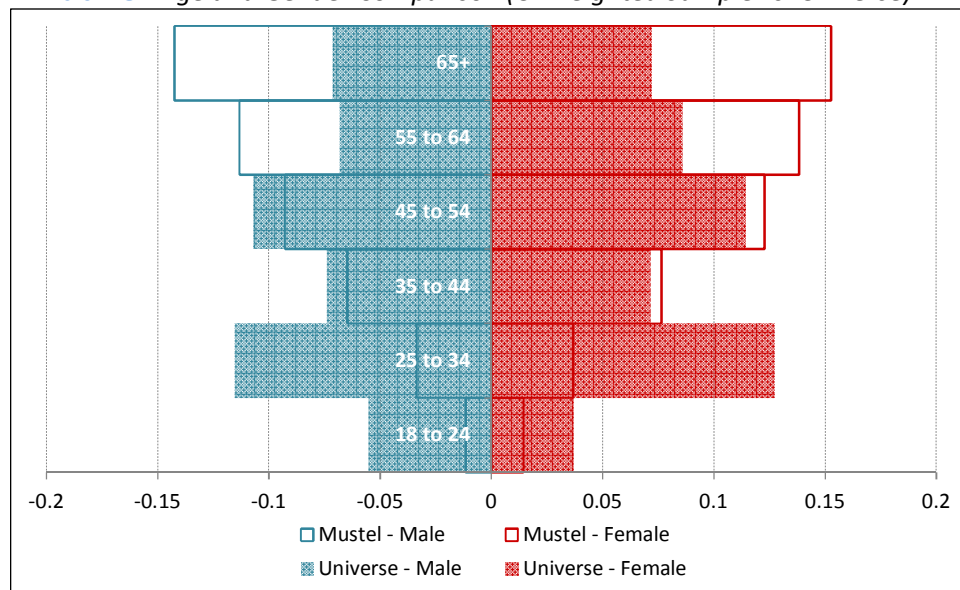
Gender	15-34	35-54	55+	Total
Male	17.6%	17.5%	13.5%	48.6%
Female	18.1%	17.9%	15.3%	51.4%
<b>Total</b>	<b>35.7%</b>	<b>35.4%</b>	<b>28.8%</b>	<b>100.00%</b>

[Exhibit 2-8](#) illustrates the age and gender distribution of the survey sample versus the study area universe: (a) Mustel telephone recruits; (b) Talk Vancouver recruits. Similar to the 2013 panel survey, there is some over-sampling of older age groups (55-65 and 65+ age cohorts) and under-sampling of younger age groups (15-24 and 25-34 cohorts). The 15-34 age group is difficult to reach in any market research effort. This age group typically does not have a landline and cell phone lists do not contain the home location of cell owners, only the location where the cell phone was purchased. As such, it is expensive and difficult to target

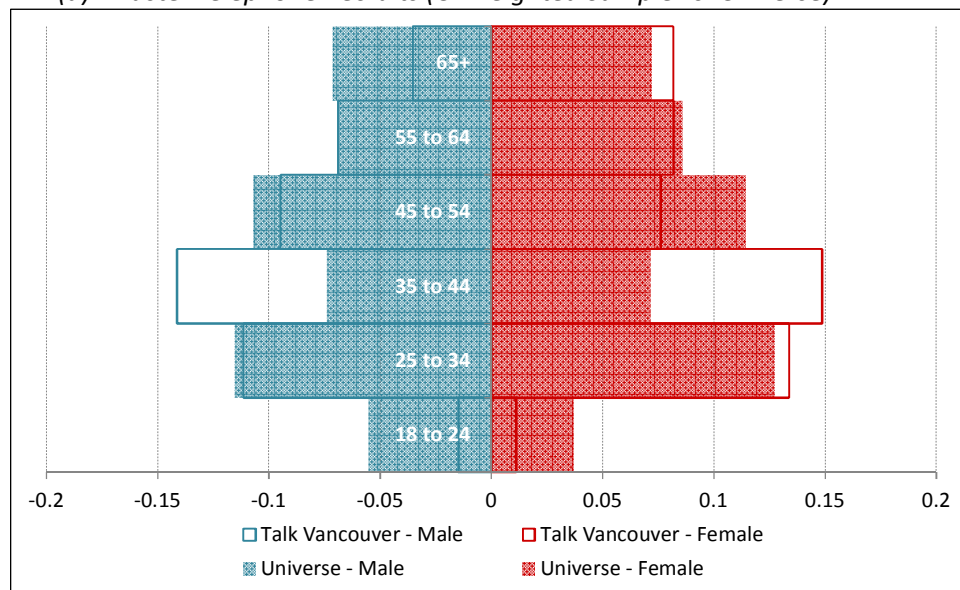
<sup>3</sup> It was also decided to show the results of CBD-West End and False Creek in the report's analysis sections both individually and merged (sections 3-5, wherever relevant) to account for the low sampling in CBD-False Creek.

geographic transportation zones based on cell phone samples for younger age groups. This does present some challenges for tracking trends in travel behaviour, especially considering that this age group is most mobile, i.e., no children and not married.

**Exhibit 2-8 –Age and Gender Comparison (Unweighted Sample vs. Universe)**



*(a) Mustel Telephone Recruits (Unweighted Sample vs. Universe)*



*(b) Talk Vancouver Recruits (Unweighted Sample vs. Universe)*

The expanded person weight above was then applied to trip data, but also included a weekday equalizer weight to balance out trip days of week (Monday to Friday). In the end, for the total sample size of 2,533 (for the random sample only) to be reflective of the entire 15+ COV population for this survey (525,093), the average expansion factor applied to the dataset was 207.3. The expanded population includes people who reported 'rather not say' for the age question.

As shown in Exhibit 2-7, the Talk Vancouver sample achieves better targets for the 25-34 age category compared to the random sample. While this suggests that the Talk Vancouver sample for that age group could be used to improve the overall sampling for the young age cohort, the Talk Vancouver sample exhibits significant bias towards walk/bike/transit modes (72% versus approximately 55%-60% as per previous panel

survey and trip diaries for the 25-34 age group). A substantial effort would be required to reweight the data to correct for this bias. As such, it was decided to keep the samples separate.

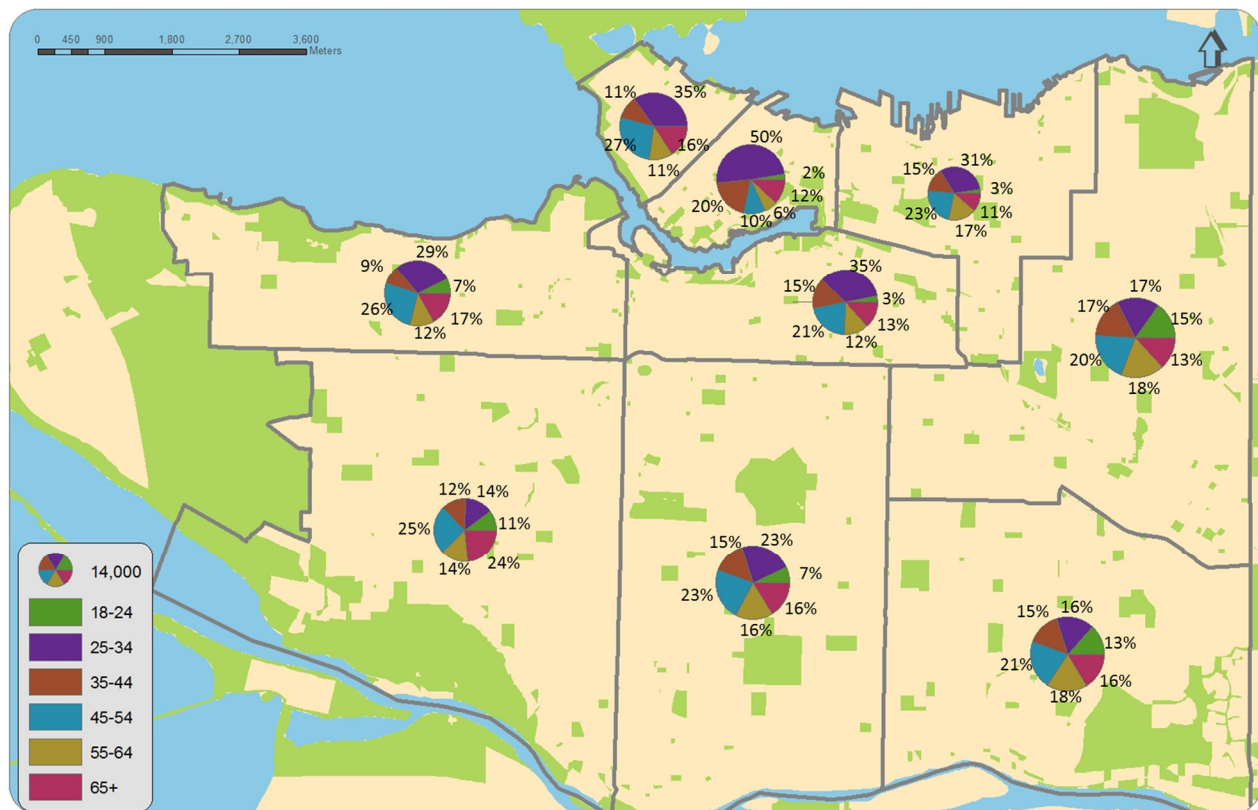


### 3. Panel Characteristics

Key characteristics of the transportation panel are presented in the following thematic maps, which show the geographic distribution of these attributes. These summaries include only randomly recruited sample (after the weighting expansion) and not the Talk Vancouver sample as discussed in Section 2.3. Only characteristics and trends of people aged 18+ are shown in this section<sup>4</sup>.

The age distribution for each zone is presented in [Exhibit 3-1](#). Note that the breakdown shown represents the expansion of the sample to the census control population by age group. The size of the pie chart represents the population size for the respective transportation zone. The CBD-West End, CBD-False Creek, Kitsilano, and Broadway zones have a high proportion of residents 34 and under. Overall, the age breakdowns by sub-area are very similar to the 2013 Panel Survey. The biggest differences are observed in the 18-24 and 25-34 age categories. This is attributed to the low sampling of those two age groups and the fact that the expansion target for the young population was to the 15-34 cohort. The 2013 and 2014 panel surveys age distribution charts would look more similar if the 18-24 and 25-34 age groups were pooled together into one category.

**Exhibit 3-1 – Age Distribution – Weighted Population**



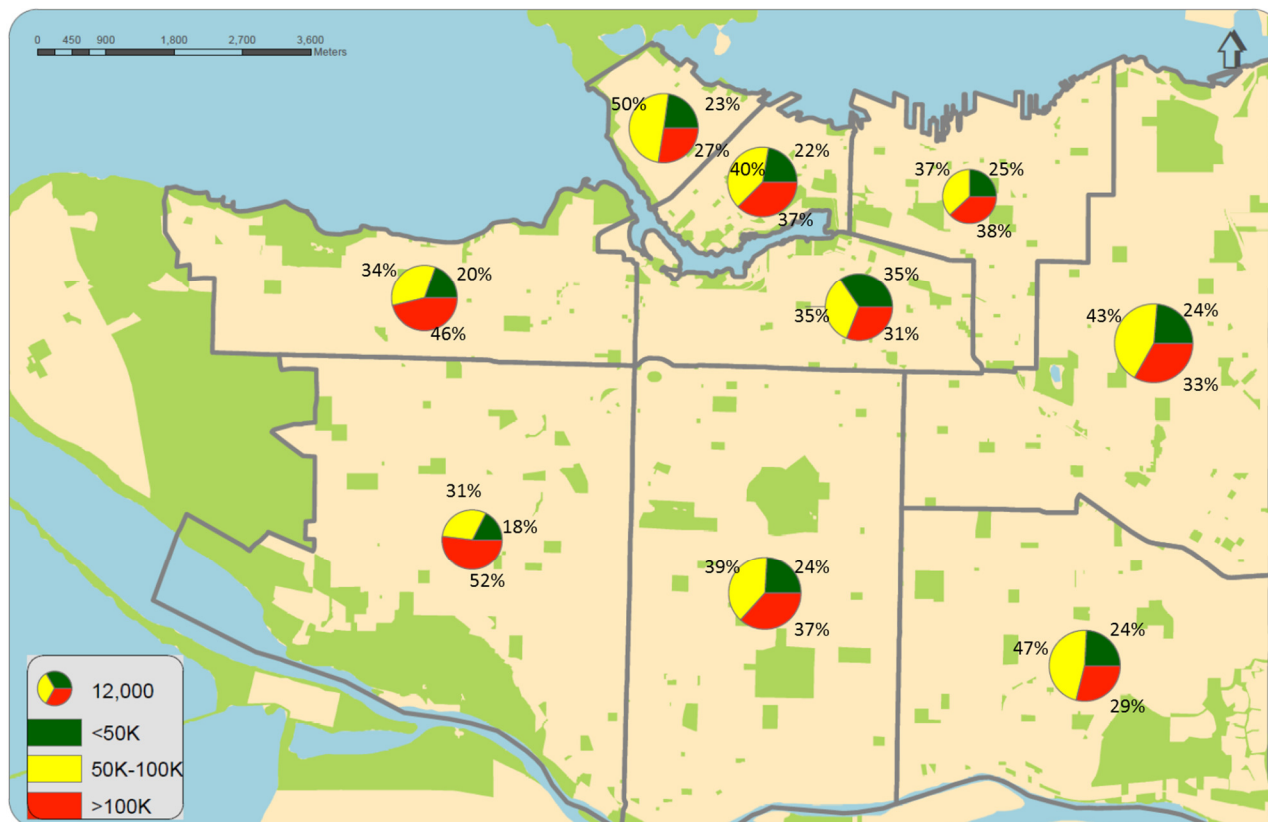
Household income can serve as a proxy for the transportation choices available to a panel member.

<sup>4</sup> TransLink's trip diary surveyed people aged five and above. The trip diary, however, only provided the age attribute by cohort. People aged 15, 16 and 17 were lumped in the 13-17 cohort. As such, while the data sampling and expansion details presented in this section include the 15-17 age cohort, it was decided to use the population 18+ as a basis for the analyses presented in this section as well as sections 4 and 5.

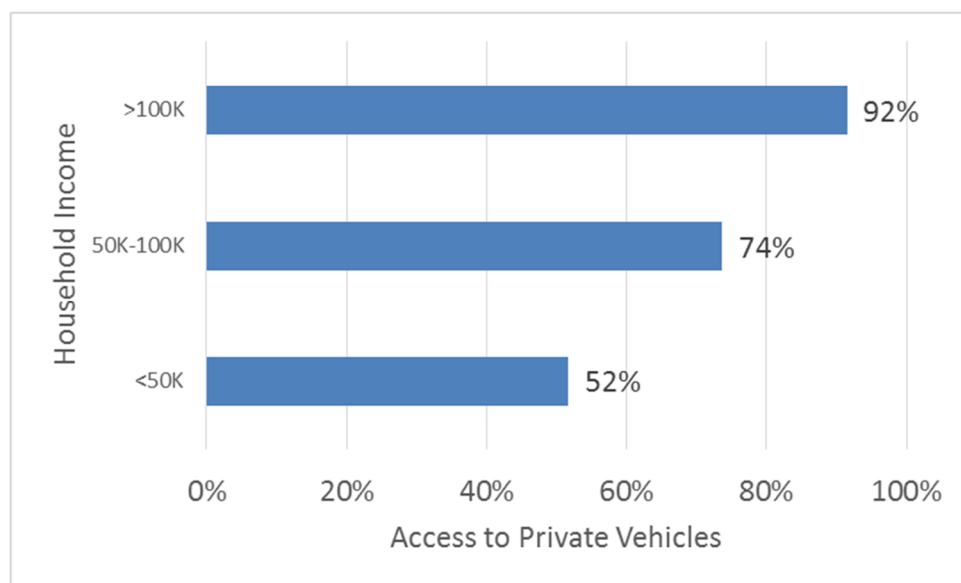


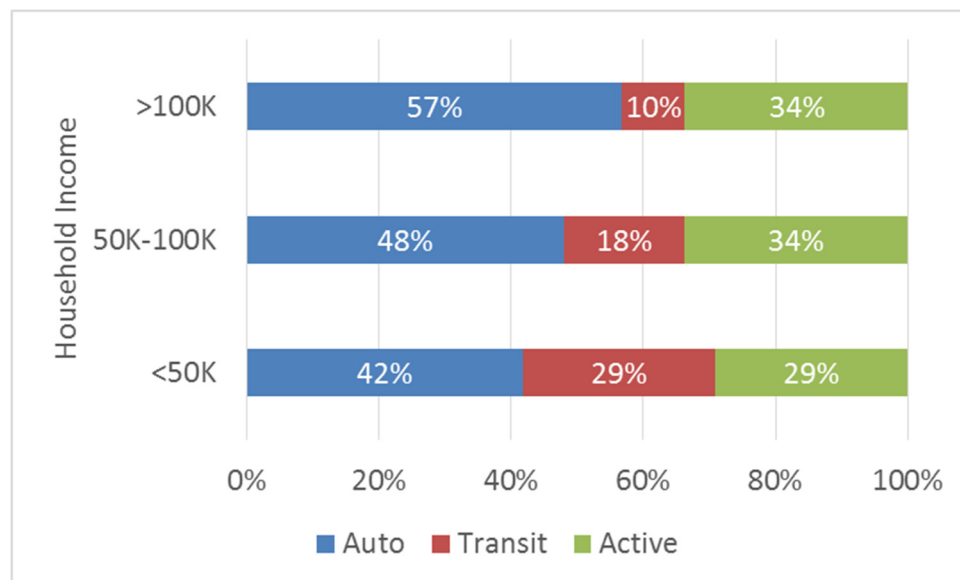
The person's household income distribution is presented in [Exhibit 3-2](#). Again, the size of the pie chart represents the population size for the respective transportation zone. In all transportation zones, a greater proportion of people living in high income (>\$100k) households participated as compared to 2013. [Exhibit 3-3](#) and [Exhibit 3-4](#), derived from the 2014 Panel Survey, both confirm that people in higher income households have more access to private vehicle and in turn have higher auto mode shares.

**Exhibit 3-2 – Household Income Range - Weighted Population**

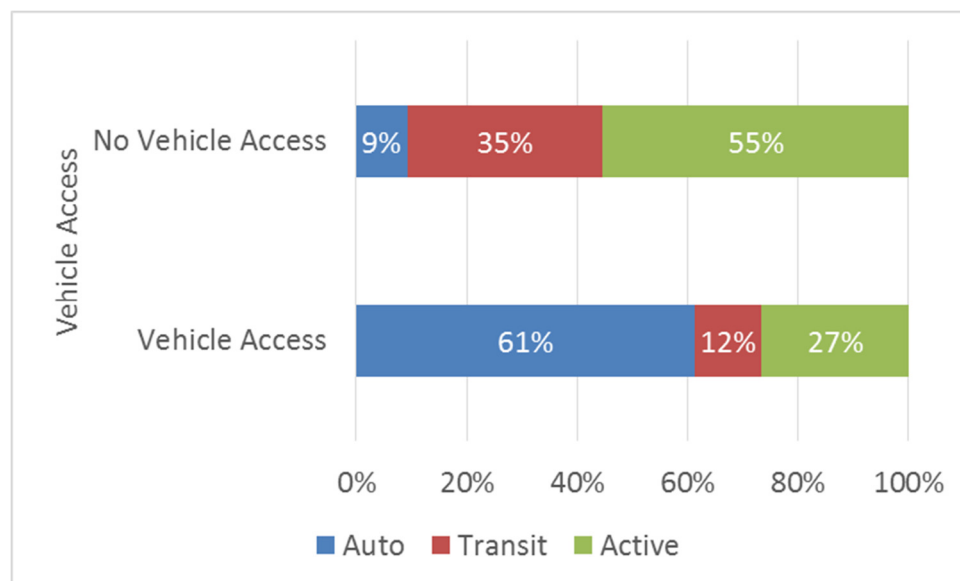


**Exhibit 3-3 – Access to Private Vehicle Proportion by Household Income**



**Exhibit 3-4 – Mode Share Distribution by Household Income**

A key indicator in determining mode choice is access to a private vehicle as clearly shown in [Exhibit 3-5](#).

**Exhibit 3-5 – Vehicle Accessibility Distribution by Mode Choice**

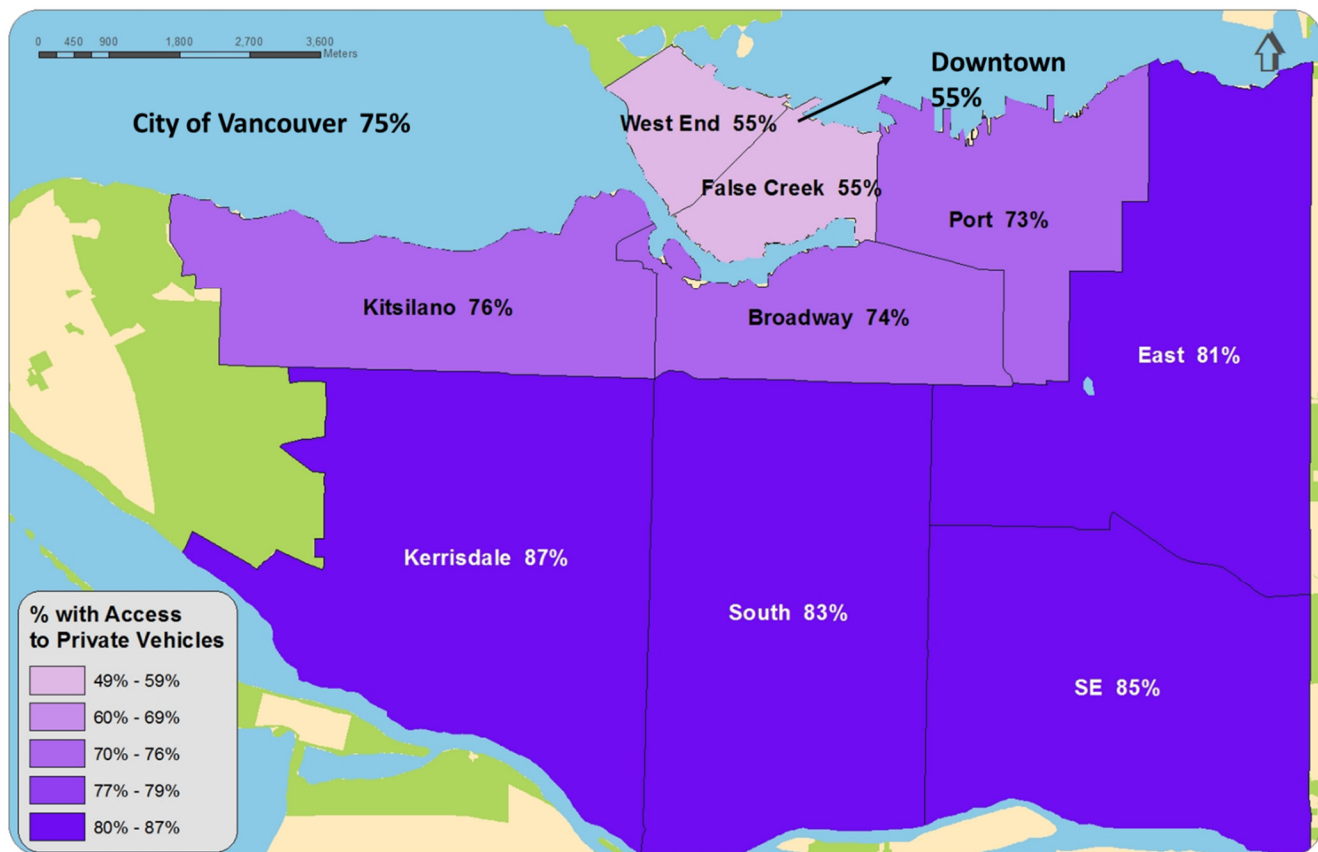
Those who have invested significant upfront costs to lease or own a vehicle are more likely to drive, since the incremental travel costs are relatively low. The distribution of those with access to a private vehicle is shown in .

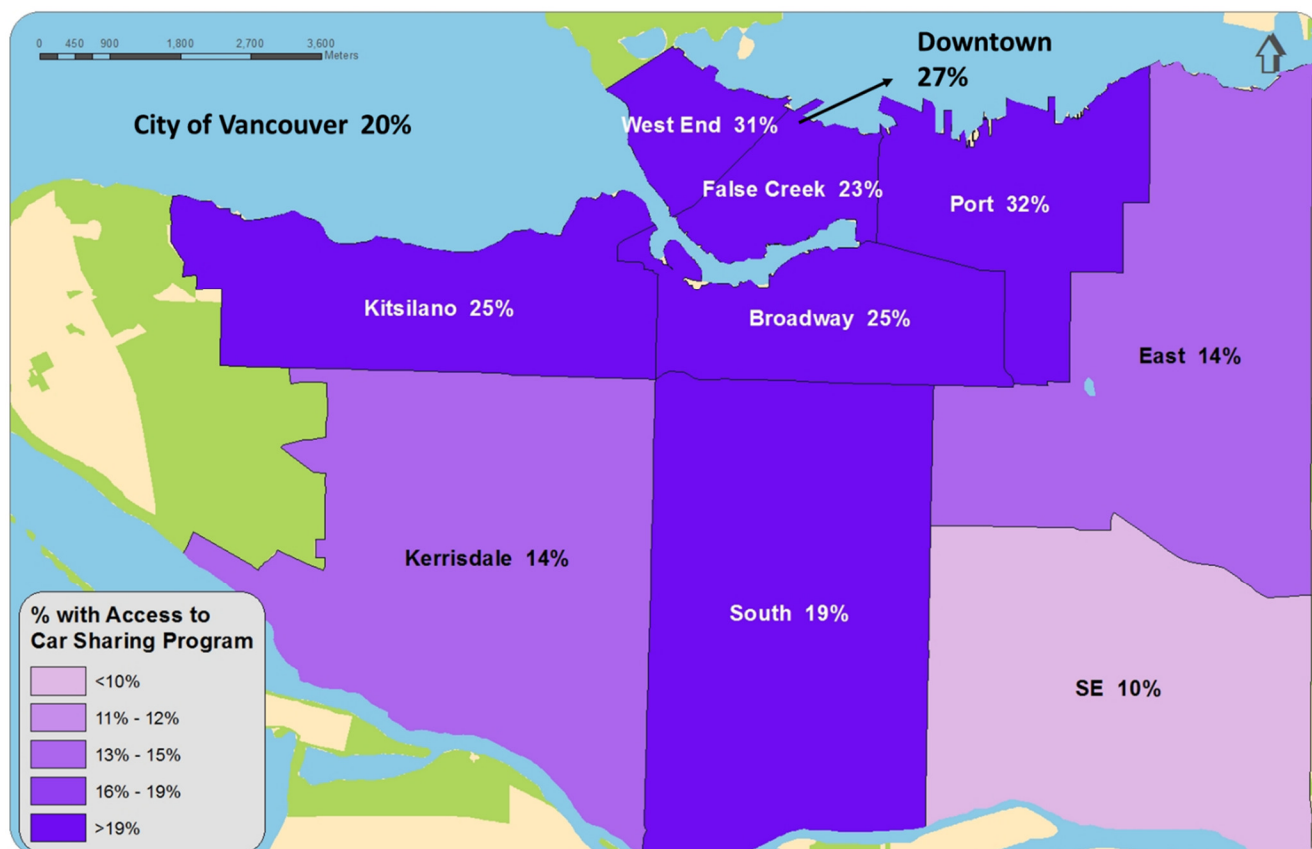
**Exhibit 3-6.** Unlike 2013, there appears to be less of a correlation between private vehicle access and income level. City-wide, the proportion of participants with access to a private vehicle grew from 72% to 75%. The increase is seen in all areas of the City with the exception of downtown, where access to private vehicles has decreased from 61% to 55%; the most marked drop occurred in the CBD-False Creek zone (78% to 55%).

Car sharing programs such as Modo, Zipcar, and Car2Go have gained patronage in recent years. The distribution of those with regular access to a car-sharing program is shown in [Exhibit 3-7](#). Subscription to car

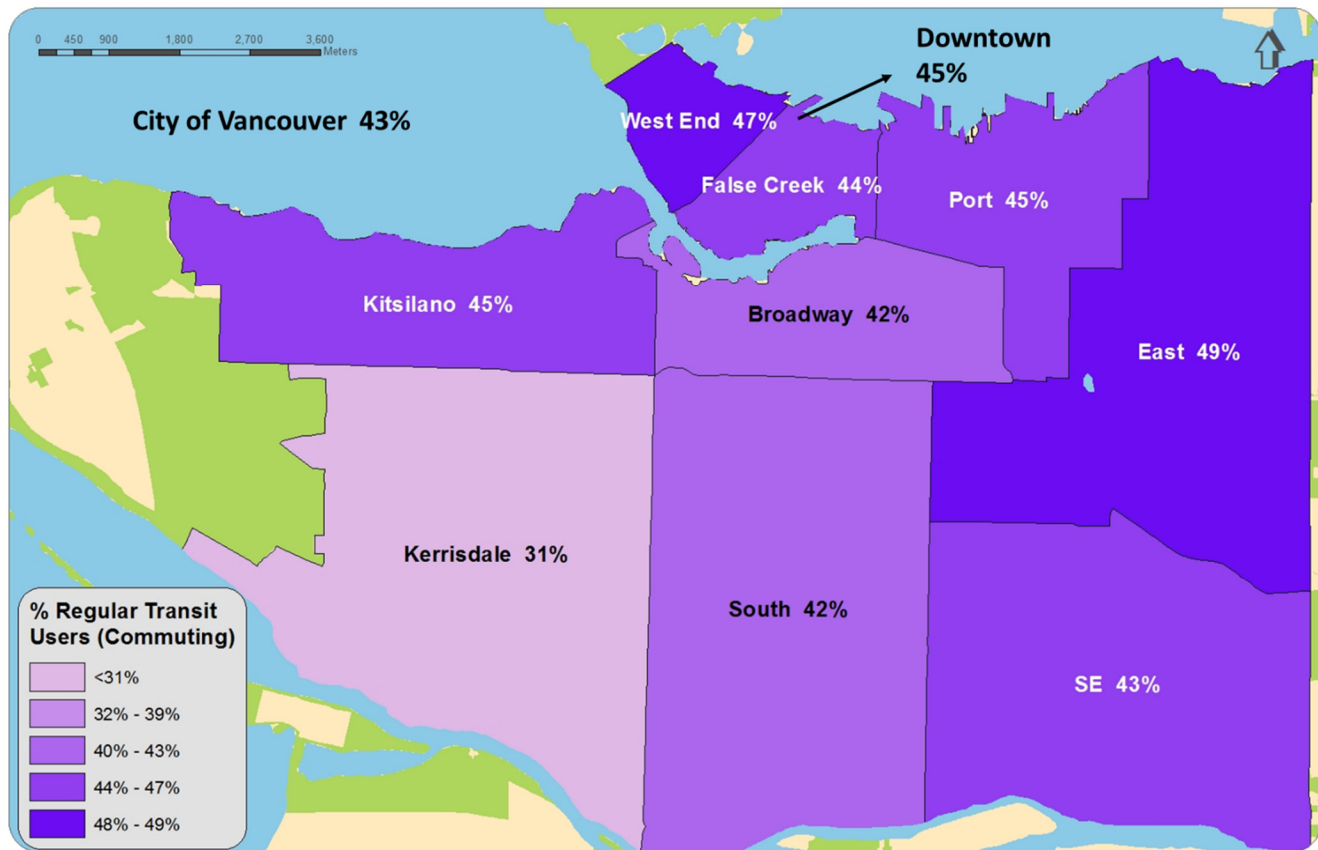
sharing programs is up to 20% from 13% in 2013. CBD-West End, Vancouver-SE, and Vancouver-South have experienced the greatest percentage increase in car share patronage. This is in contrast to the 2013 survey, where car share was most prevalent in Kitsilano and the zones closest to False Creek.

**Exhibit 3-6 – Private Vehicle Access**

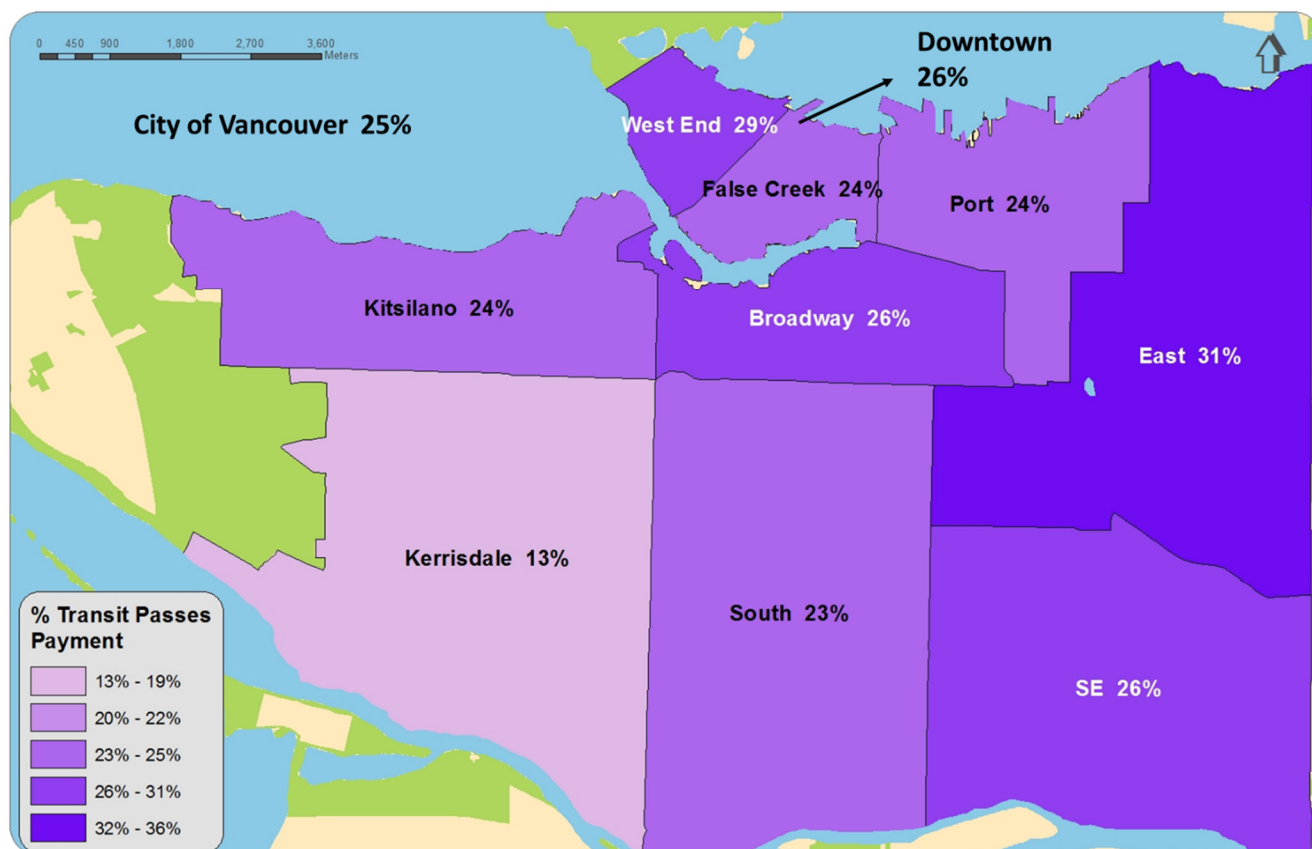


**Exhibit 3-7 – Access to Car Sharing Program**

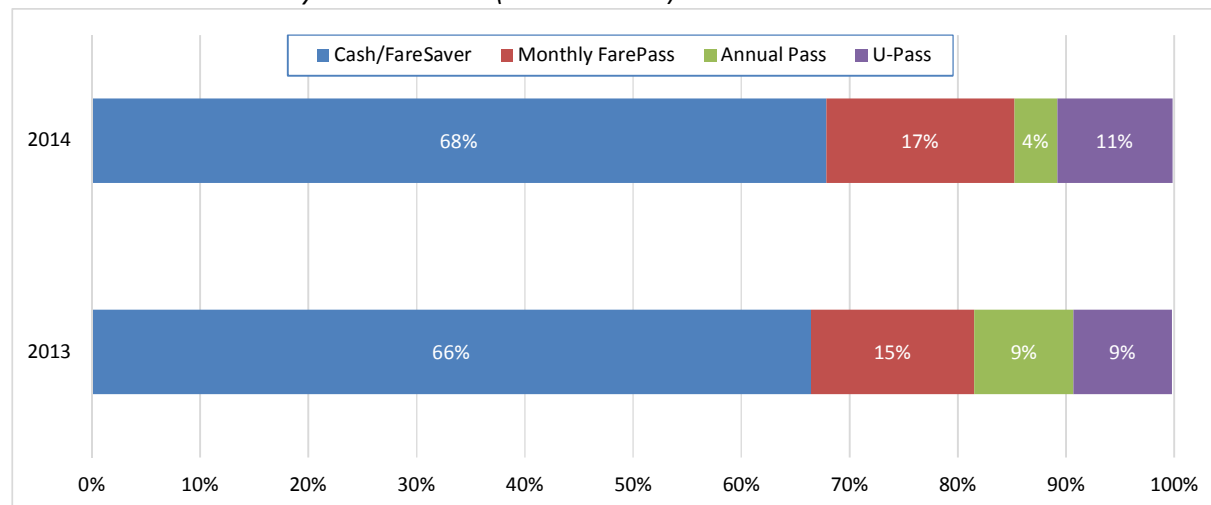
In both of the panel surveys, the largest transportation segment after auto drivers is made up of public transit users. [Exhibit 3-8](#) shows the distribution of people who identified transit as their usual mode of travel to work/school). Compared to 2013, the rate of transit usage for commute trips was stable or exhibited a slight increase in all areas of the City, with the exception of the CBD-West End zone. As expected, the pattern is nearly a mirror image of those with private vehicle access. While TransLink and ultimately the Province have responsibility for transit provision, the City can also take an active role in supporting transit usage by improving walking and cycling connections to bus stops and SkyTrain/Seabus stations as well as amenities at these locations including shelters, information displays, good lighting and others.

**Exhibit 3-8** –People who identified transit as their usual mode of travel to work/school)

**Exhibit 3-9** shows the proportion of participants who use transit passes. The geographic distribution echoes that of regular transit users, which is to be expected.

**Exhibit 3-9 – People Reporting Transit Passes as Favored Method of Payment**

In 2014, the annual employer pass program was discontinued by TransLink. This will create a shift in the way transit users pay for transit. [Exhibit 3-10](#) illustrates the shift from 2013 to 2014. The payment options are grouped into the following categories: Cash/FareSavers, Monthly FarePass, Annual Pass (includes employer pass, annual pass, and Compass), and U-Pass. The share of annual pass users drops by about 56%, going from 9% in 2013 to 4% in 2014. This drop is balanced by increases in the three other groups. This suggests that the discontinuation of the employer pass did see a shift towards other payment options, but it is not possible to determine the degree of this shift.

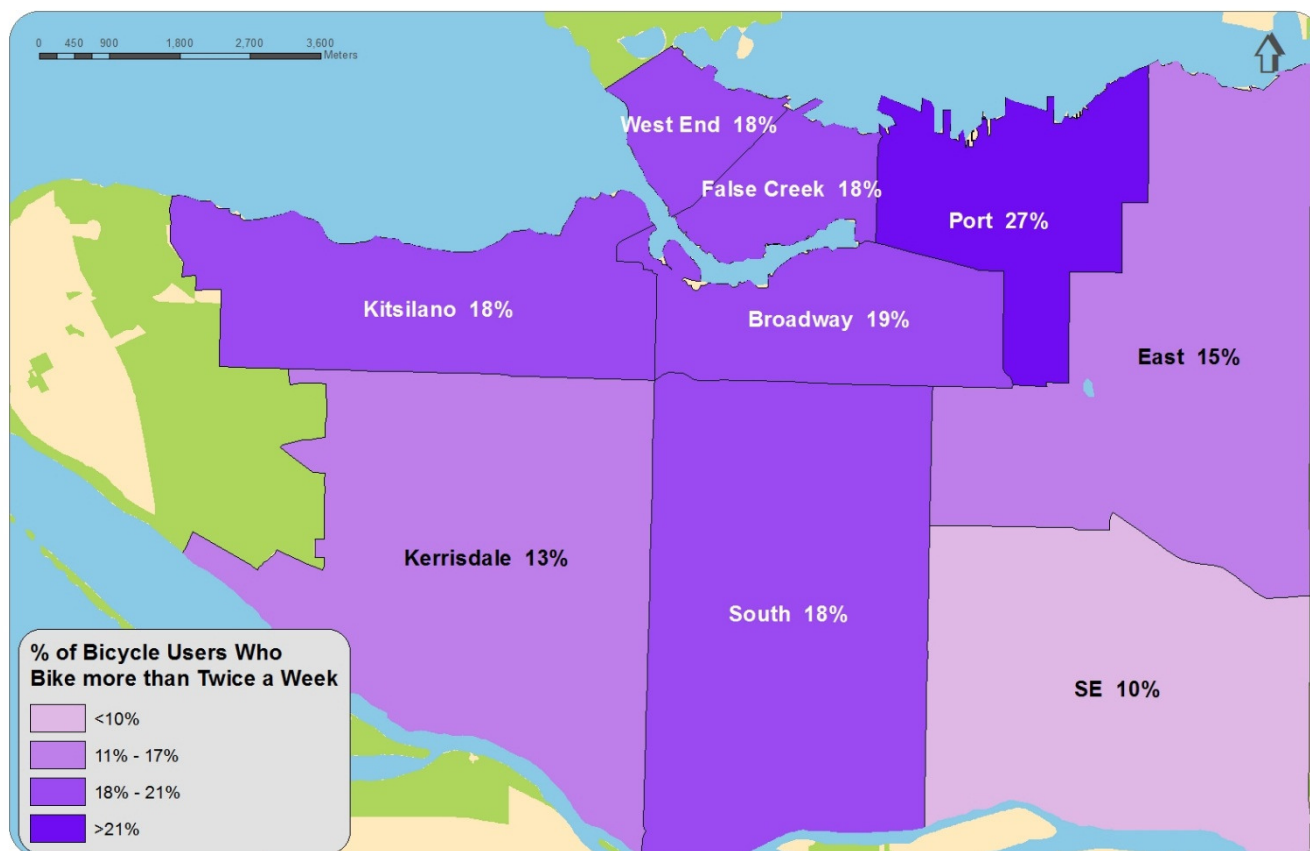
**Exhibit 3-10 – Transit Payment Methods (2013 vs. 2014)**

In accordance with the vision set out in successive transportation plans – most recently in Transportation 2040 – the City has taken steps to complete a bicycle network that is designed for people of all ages and abilities. In particular, cycling infrastructure has been expanded within the CBD transportation zones, and on Point Grey Road in Kitsilano.

In 2014, the survey instrument was expanded to include four questions related to the market for residents' interest in cycling. These included two questions related to the frequency with which respondents currently ride a bike, whether respondents would like to ride a bike more often, and the environments in which they are comfortable riding.

In order to generally understand the frequency with which respondents travel by bicycle, the 2013 survey included a question asking respondents to identify whether they use a bicycle regularly, occasionally or rarely, but the interpretation of what constituted “regular”, “occasional” or “rare” was left to the interpretation of the respondent. In 2014, the question was altered to ask respondents specifically how often they generally use a bicycle: at least twice per week, once per week to once per month, or less than once per month. **Exhibit 3-11** maps the distribution of the respondents who indicated that they cycled at least twice per week. The highest concentration is within the Port transportation zone, with another significant segment in those zones surrounding False Creek (i.e. Kitsilano, Broadway, CBD-False Creek) and Vancouver - South.

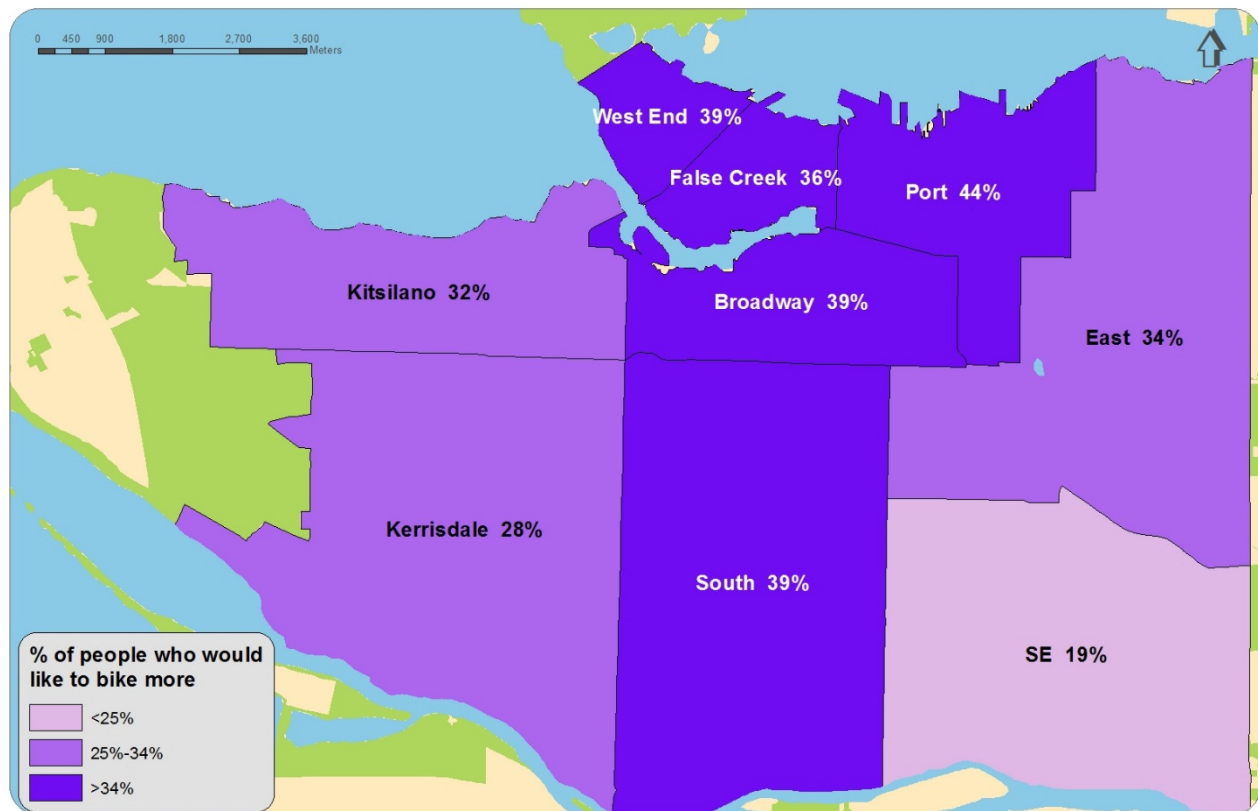
**Exhibit 3-11** – Respondents Who Generally Use a Bicycle at Least Twice Per Week



A second question was added for respondents to indicate whether they prefer to travel by bicycle only in fair weather or year round. Respondents were also asked if they would like to travel by bicycle more often than they do currently. Preliminary results indicate that approximately 40% of respondents in the Port, West End, Broadway, and Vancouver-South zones, as shown in **Exhibit 3-12**, would like to cycle more often.

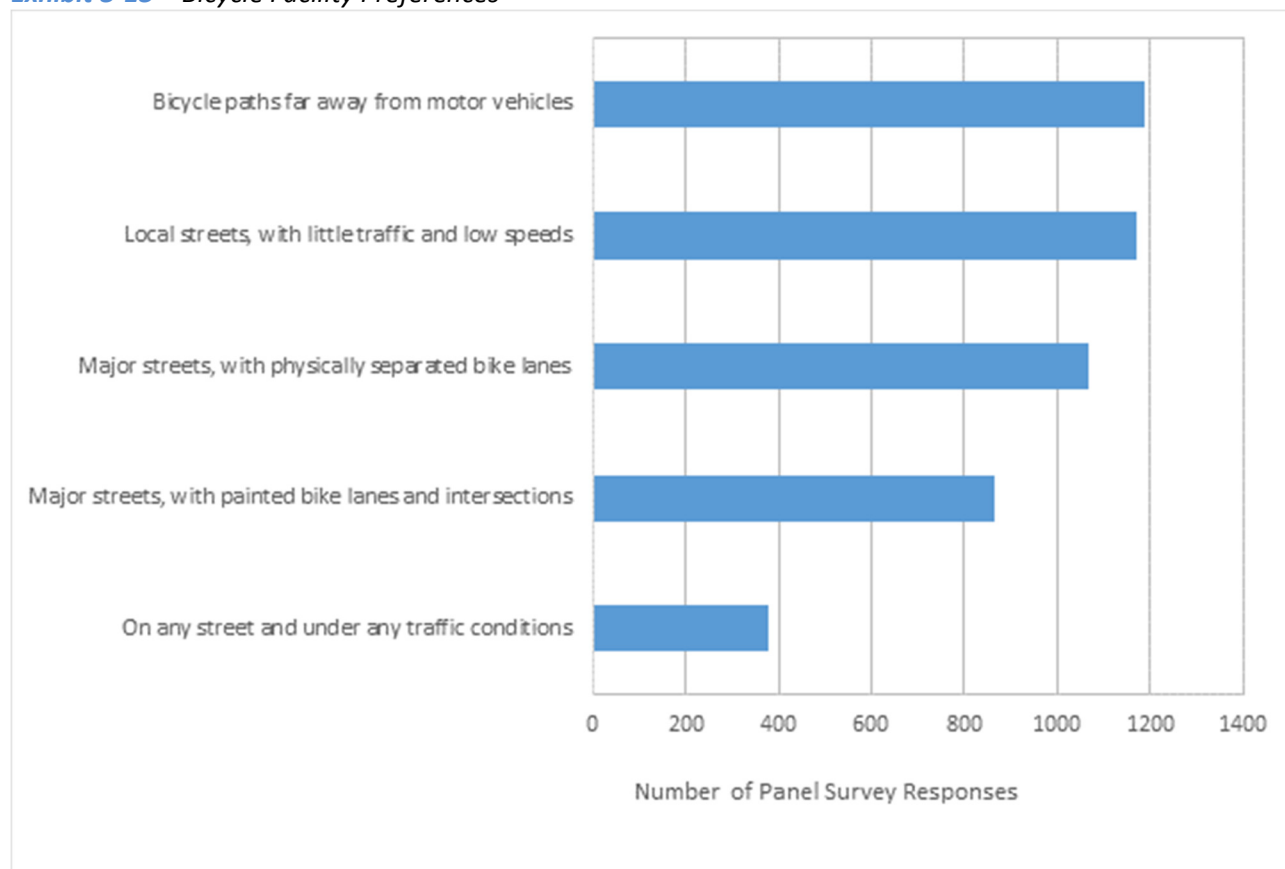


**Exhibit 3-12** – Respondents Who Would Like to Travel by Bicycle More Often



In 2014, the survey instrument was expanded to include a question regarding the types of bicycle facilities that participants would feel comfortable using. The sample results shown in [Exhibit 3-13](#) suggest, as expected, a strong preference for cycling away from traffic. It is anticipated that City staff will use the combined responses to these four questions to better understand the potential cycling market in Vancouver.



**Exhibit 3-13** – *Bicycle Facility Preferences*

## 4. Trip Characteristics

One of the main objectives of the panel survey is to track trends in transportation choices, especially as they relate to specific City initiatives and infrastructure improvements. This analysis section is focused on comparing the 2013 and 2014 panel survey results. Upcoming panel survey reports will include comparisons to past panel surveys and future Trip Diary results as they become available.

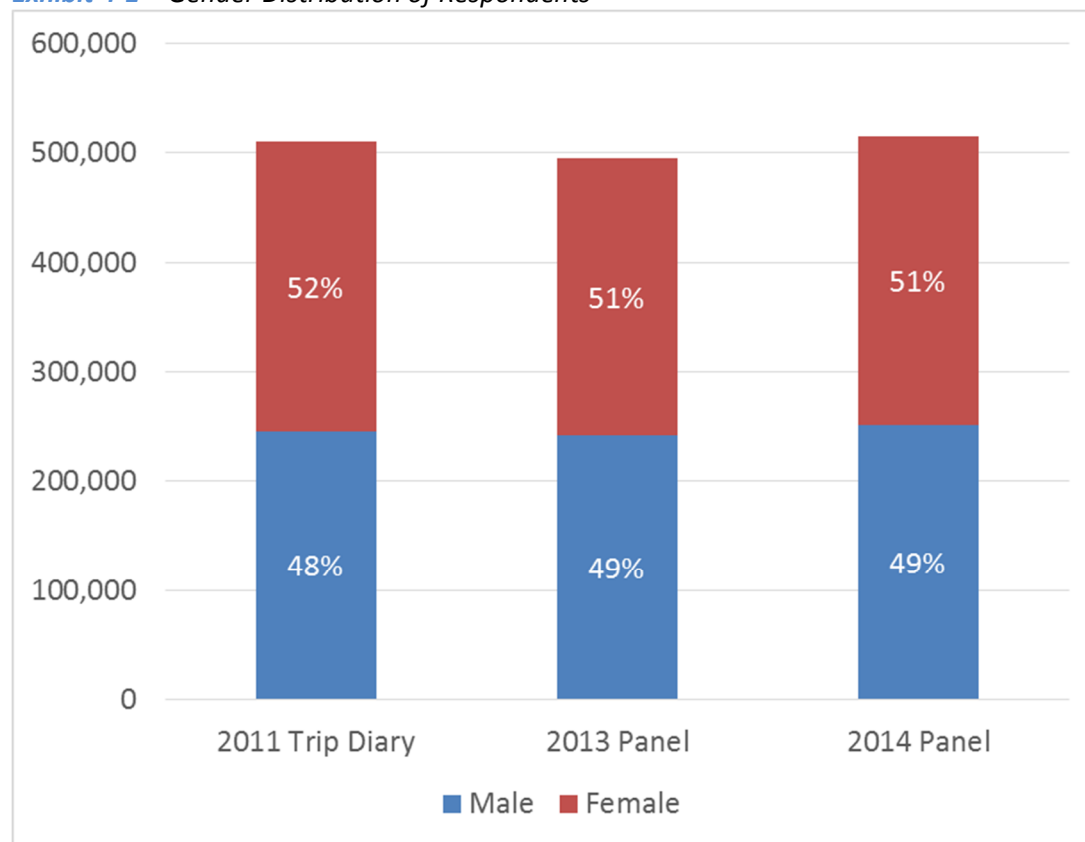
Another objective of the panel survey is to add to the emerging understanding of the relationship between transportation choices and health. For the first time the City has included a question related to general health assessment in a trip diary survey.

The panel is representative of an expanded population of **515,200** people aged 18 or above<sup>5</sup>. This represents a 4% increase from the expanded population calculated for 2013 (**495,000**). For context, the 2011 Trip Diary represents an expanded population of **510,000** people aged 18 or above.

### 4.1 Demographic Comparison

**Exhibit 4-1** shows that the gender distribution of the 2014 panel survey is the same as the 2013 panel survey, and similar to that of the 2011 Trip Diary.

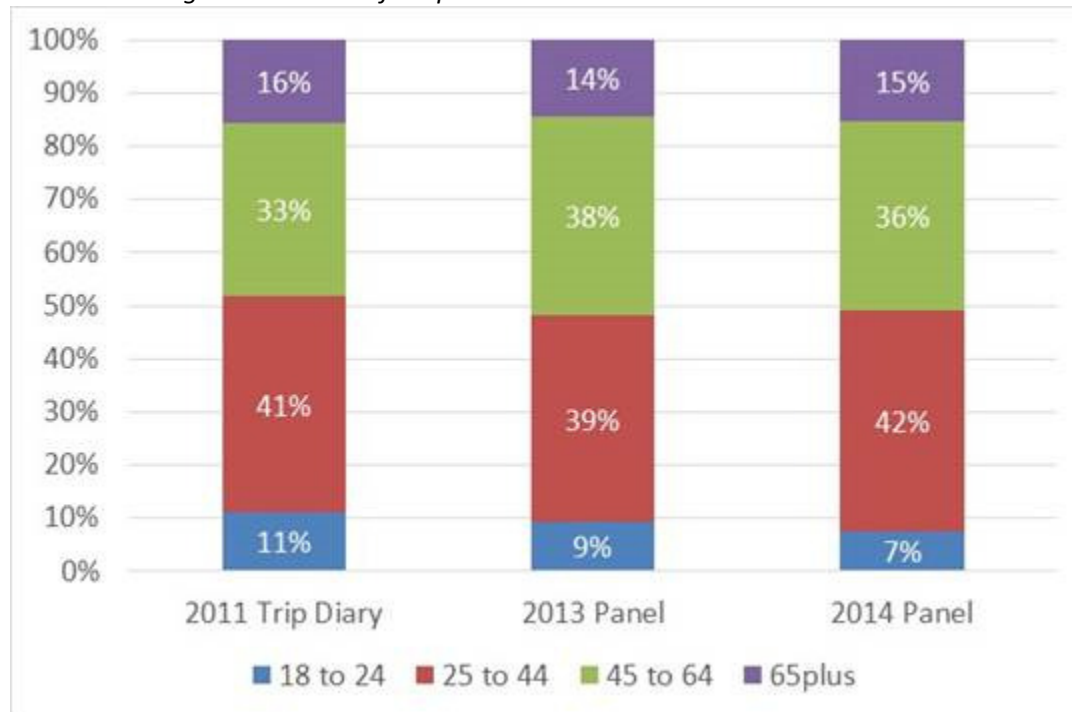
**Exhibit 4-1 – Gender Distribution of Respondents**



<sup>5</sup> People who did not report an age were assumed to be 18 or above as most of them reported to be full-time employed.

**Exhibit 4-2** shows differences in the age distribution of the 2014 panel survey from that of the 2013 panel survey and 2011 Trip Diary. Of note, the 2014 panel's 18-24 age cohort is smaller than previous surveys, underscoring the need to try new methods of engaging with this young demographic.

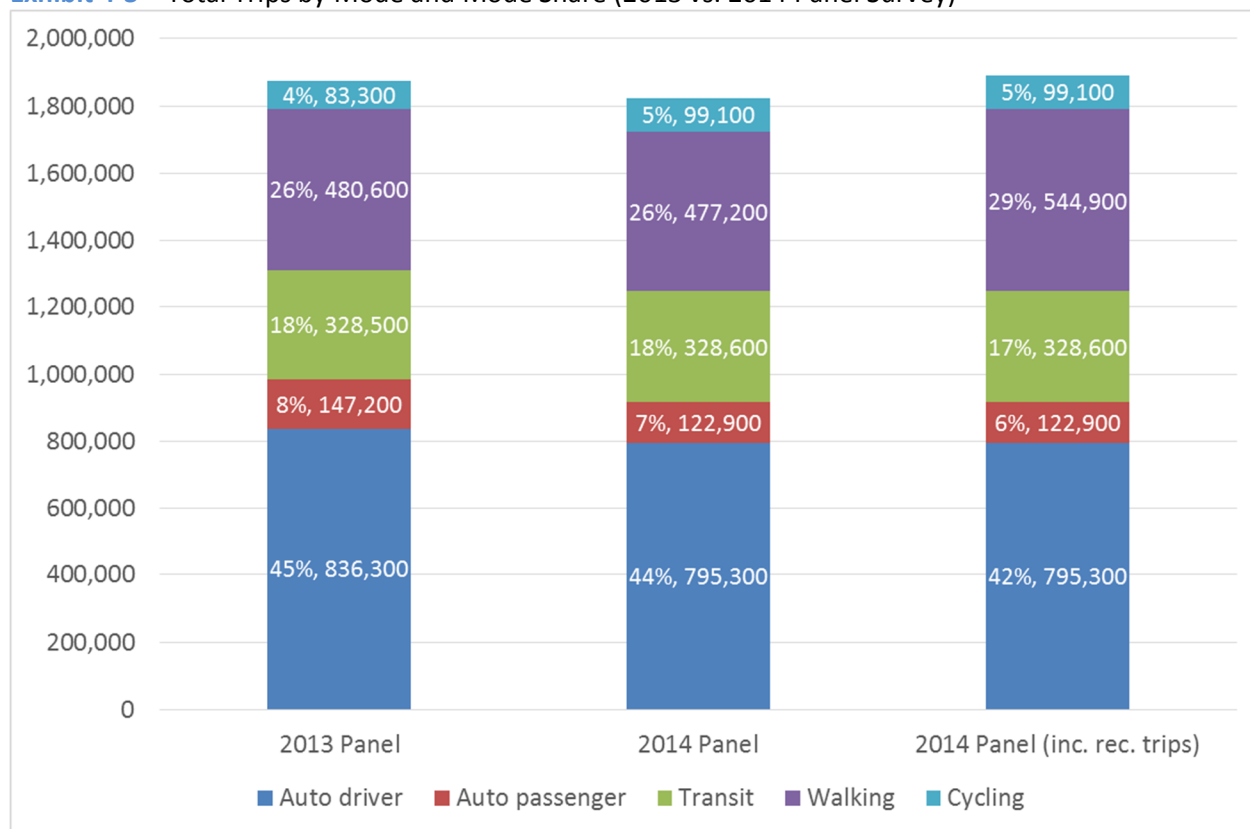
**Exhibit 4-2 – Age Distribution of Respondents**



## 4.2 Mode Share

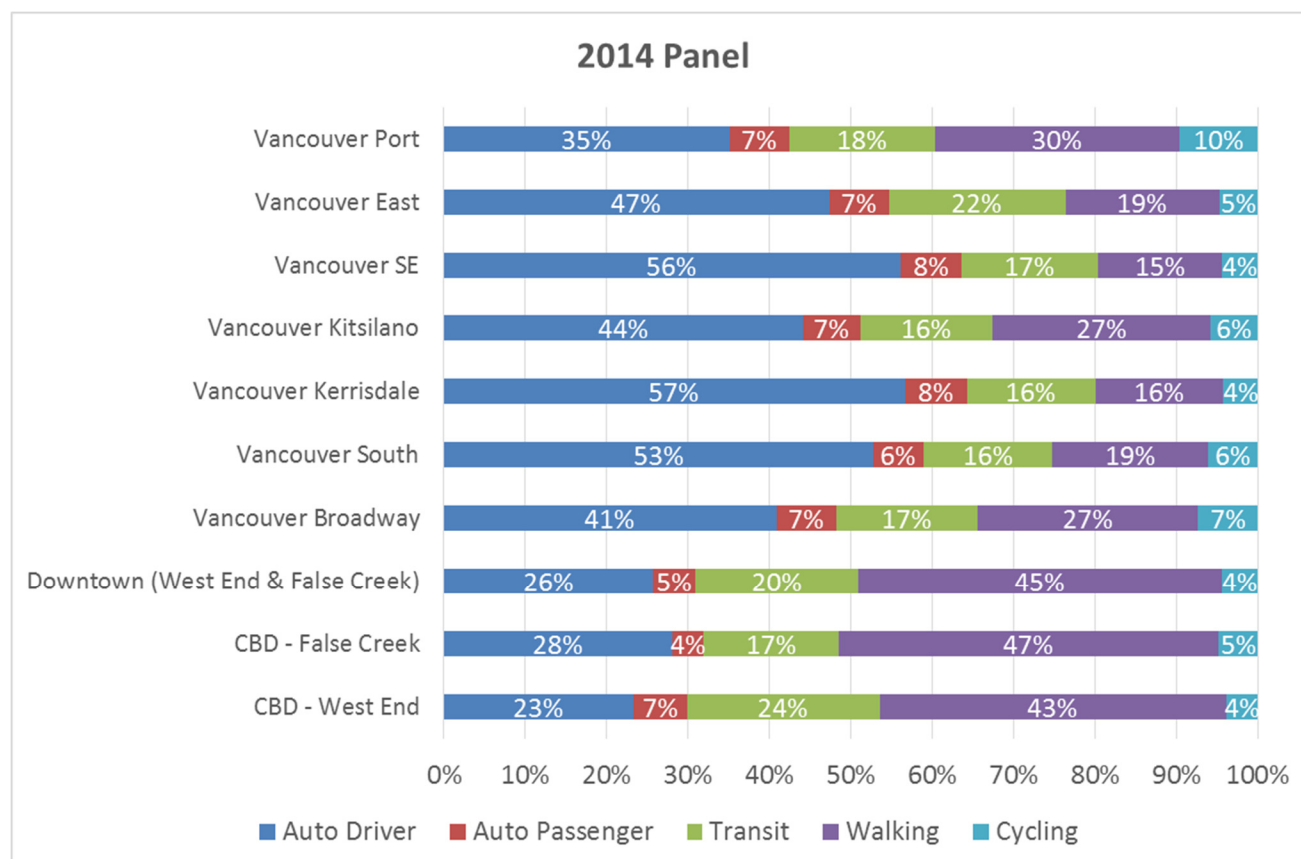
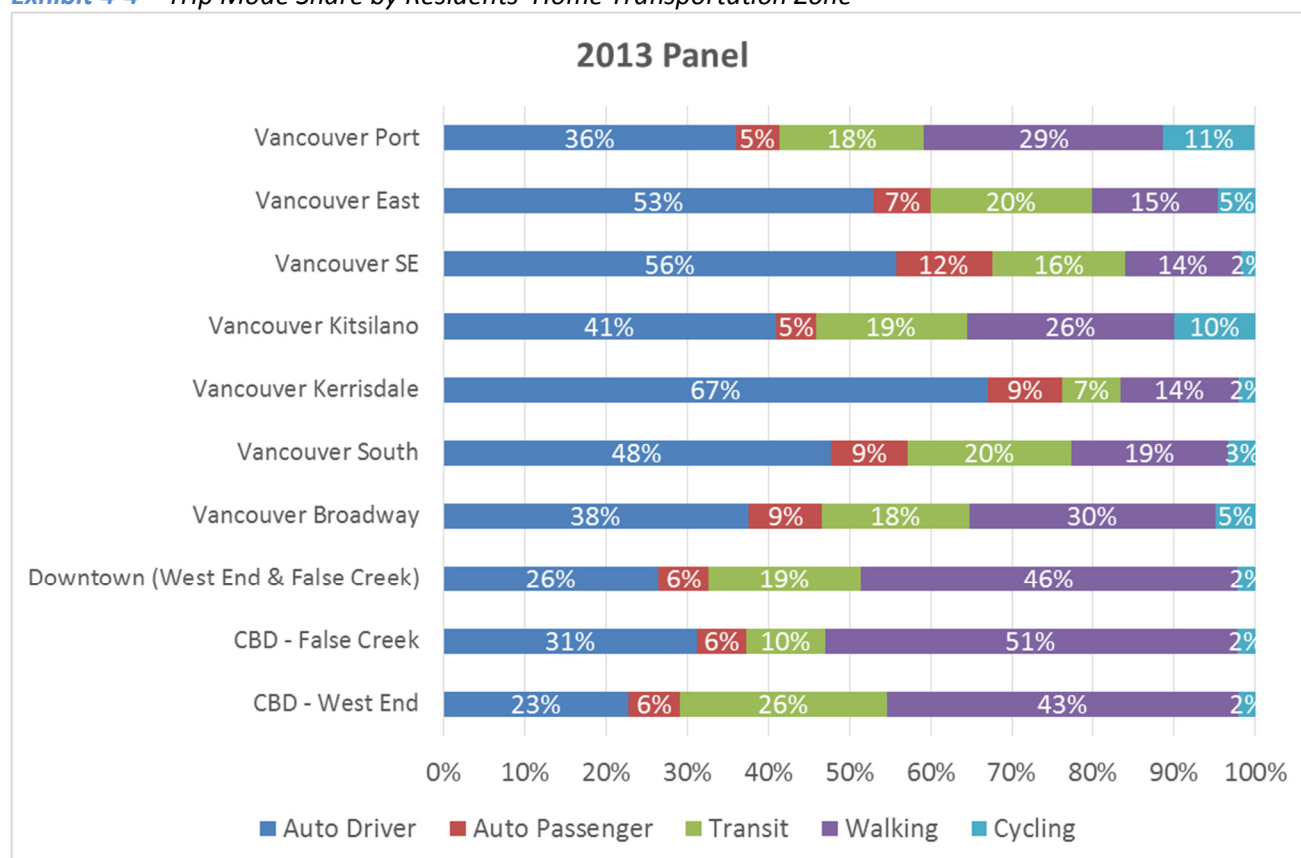
The City is particularly interested in tracking how walk/bike/transit mode share grows over time.

**Exhibit 4-3** compares the overall mode shares of the 2013 and 2014 Panel Surveys (with and without recreational trips). In this initial snapshot, it is evident that cycling mode share has increased, auto driver/passenger mode share have decreased, and walking and transit mode shares have held steady from 2013 when compared with the 2014 Panel results that exclude recreational trips. As the bulk of recreational trips were walking, the inclusion of such trips results in approximately 70,000 more trips, a 3% increase in walk share (26% to 29%) and a 1-2% decrease for the remaining modes.

**Exhibit 4-3 – Total Trips by Mode and Mode Share (2013 vs. 2014 Panel Survey)**

**Exhibit 4-4** compares the Panel Survey mode share for reported trips, broken down by residents' home transportation zone (regardless of the actual location of the trip origins and destinations), for the 2013 and 2014 Panel Surveys. The reported trip mode share distribution by zone is consistent with the patterns observed in 2013. It will be possible to track trends in mode share at the zone level with future survey data, however, some caution should be exercised as disaggregating the data to this level can produce results with wider confidence ranges, especially in cases where the mode shifts are above or below  $\pm 2\%$ . It is generally more appropriate to compare results between panel surveys at more aggregate levels, for example, by using walk/bike/transit mode share or merged subareas.

**Exhibit 4-5** summarizes the Panel Survey walk/bike/transit mode share for reported trips (transit, walking and cycling) by transportation zone. It also highlights the 95% and 90% confidence intervals of these results as well as the number of samples required to achieve a  $\pm 5\%$  mode share error range at the 95% confidence level. Exhibit **Exhibit 4-5** also compares the 2013 and 2014 survey results for walk/bike/transit mode share and corresponding confidence intervals. The table highlights the year over year variation when mode share is compared by transportation zone. With the exception of Kerrisdale, however, the 2014 walk/bike/transit mode shares still fall within the 2013 confidence intervals which enhances our overall confidence in the reliability of the results. For comparative analysis, it is best to use aggregate statistics such as Downtown or Vancouver mode shares.

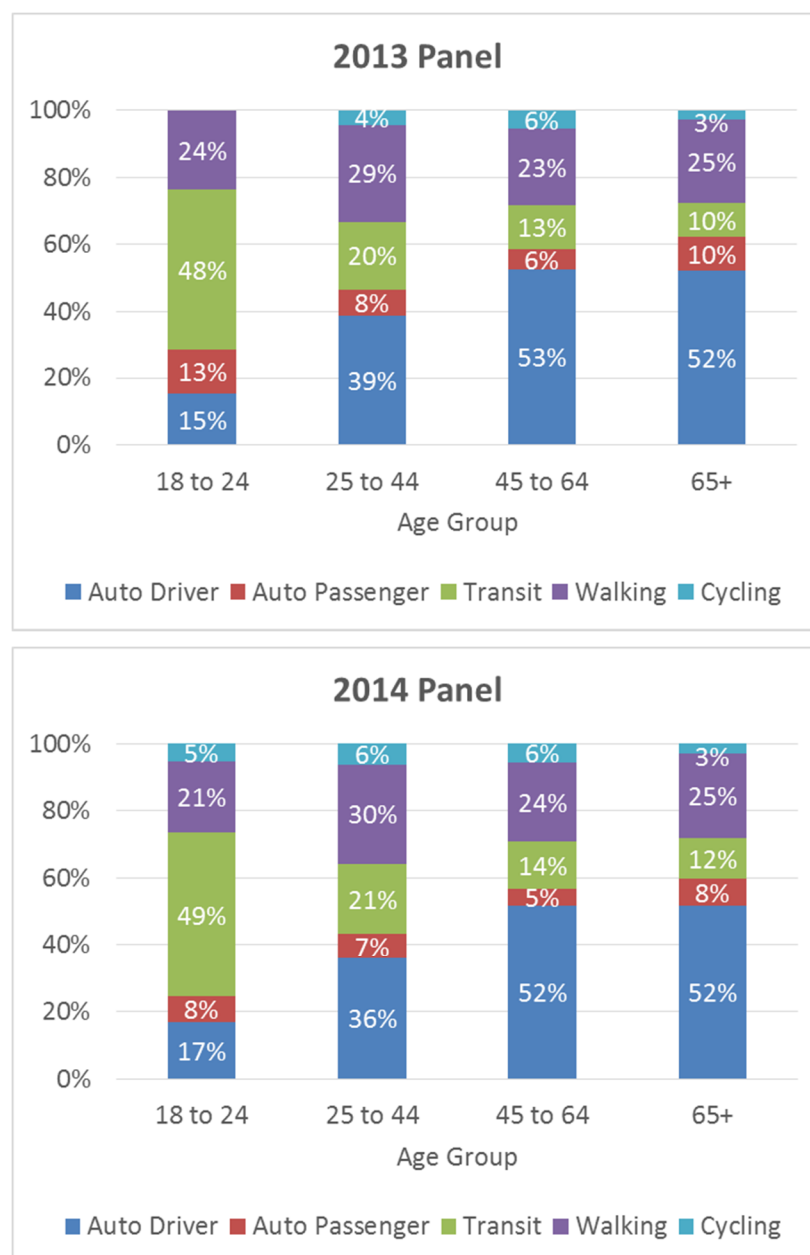
**Exhibit 4-4 – Trip Mode Share by Residents' Home Transportation Zone**

**Exhibit 4-5 – Aggregate walk/ bike / transit By Transportation Zone and Sample Size**

Transportation Zone	Transit/Walk/Bike Mode Share (%)	95% Confidence Interval	90% Confidence Interval	No. of persons sampled (18+)	Sample size Required at 95% CI for error range +/- 5%
1 CBD - West End	70%	(64%-76%)	(65%-75%)	242	321
2 CBD - False Creek	68%	(61%-75%)	(62%-74%)	191	334
<b>Downtown (West End &amp; False Creek)</b>	<b>69%</b>	<b>(65%-73%)</b>	<b>(65%-73%)</b>	<b>433</b>	<b>328</b>
3 Vancouver Broadway	52%	(46%-58%)	(47%-57%)	282	383
4 Vancouver South	41%	(36%-46%)	(37%-45%)	358	372
5 Vancouver Kerrisdale	36%	(30%-41%)	(31%-40%)	270	352
6 Vancouver Kitsilano	49%	(43%-54%)	(44%-53%)	338	383
7 Vancouver SE	36%	(30%-42%)	(31%-41%)	262	355
8 Vancouver East	45%	(40%-51%)	(41%-50%)	331	380
9 Vancouver Port	58%	(51%-64%)	(52%-63%)	244	375
<b>City of Vancouver</b>	<b>50%</b>	<b>(48%-52%)</b>	<b>(48%-51%)</b>	<b>2,518</b>	<b>2,928</b>

Transportation Zone	2013 Panel		2014 Panel	
	Transit/Walk/Bike Mode Share (%)	95% Confidence Interval	Transit/Walk/Bike Mode Share (%)	95% Confidence Interval
1 CBD - West End	71%	(65%-76%)	70%	(64%-76%)
2 CBD - False Creek	63%	(55%-70%)	68%	(61%-75%)
<b>Downtown (West End &amp; False Creek)</b>	<b>67%</b>	<b>(63%-72%)</b>	<b>69%</b>	<b>(65%-73%)</b>
3 Vancouver Broadway	53%	(48%-59%)	52%	(46%-58%)
4 Vancouver South	43%	(37%-48%)	41%	(36%-46%)
5 Vancouver Kerrisdale	24%	(19%-29%)	36%	(30%-41%)
6 Vancouver Kitsilano	54%	(49%-59%)	49%	(43%-54%)
7 Vancouver SE	32%	(27%-38%)	36%	(30%-42%)
8 Vancouver East	40%	(34%-46%)	45%	(40%-51%)
9 Vancouver Port	59%	(52%-65%)	58%	(51%-64%)
<b>City of Vancouver</b>	<b>48%</b>	<b>(46%-49%)</b>	<b>50%</b>	<b>(48%-52%)</b>

**Exhibit 4-6** compares the mode share by age distribution between the 2014 and 2013 Panel Surveys. As expected and observed in previous travel surveys, people in the 18-24 and 25-44 cohorts tend to use walk/bike/transit mode shares (transit, walking and cycling) more than the 45+ cohort. The 2014 Panel Survey indicates higher cycling mode shares among the 18-24 and 25-44 age groups. The growth needs to be tempered by recognizing that the small sample size in these age groups could lead to overrepresentation.

**Exhibit 4-6 – Mode Share by Age Distribution<sup>6</sup>**

## 4.3 Trip Purpose

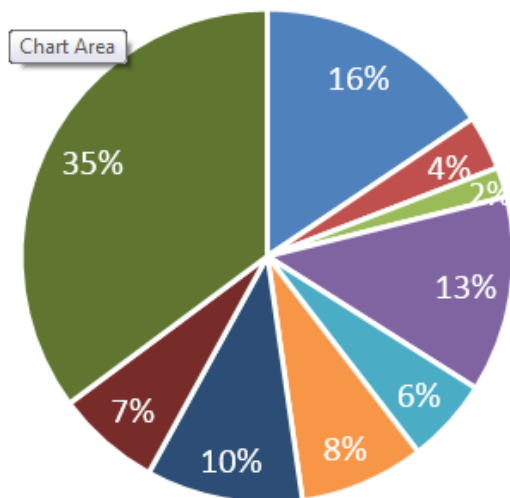
**Exhibit 4-7** shows a comparison of trip purposes for the 2013 and 2014 Panel Surveys. The distribution by trip purpose is relatively consistent between the two surveys.

<sup>6</sup> The Panel survey sample size for the 18 to 24 age cohort is small (i.e. less than 100 records). Caution needs to be undertaken in the interpretation of results from that age group. For example, a 2% bike mode split as per the Trip Diary would have only had 2 trips out of 100 be by bicycle.



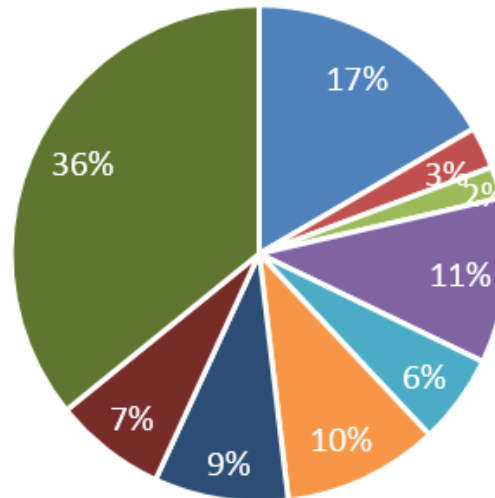
**Exhibit 4-7 – Trip Purpose Distribution**

2013 Panel Trips, Excluding Unknown (%)



- To work
- To school
- Dining / Restaurant
- Personal business
- To go home

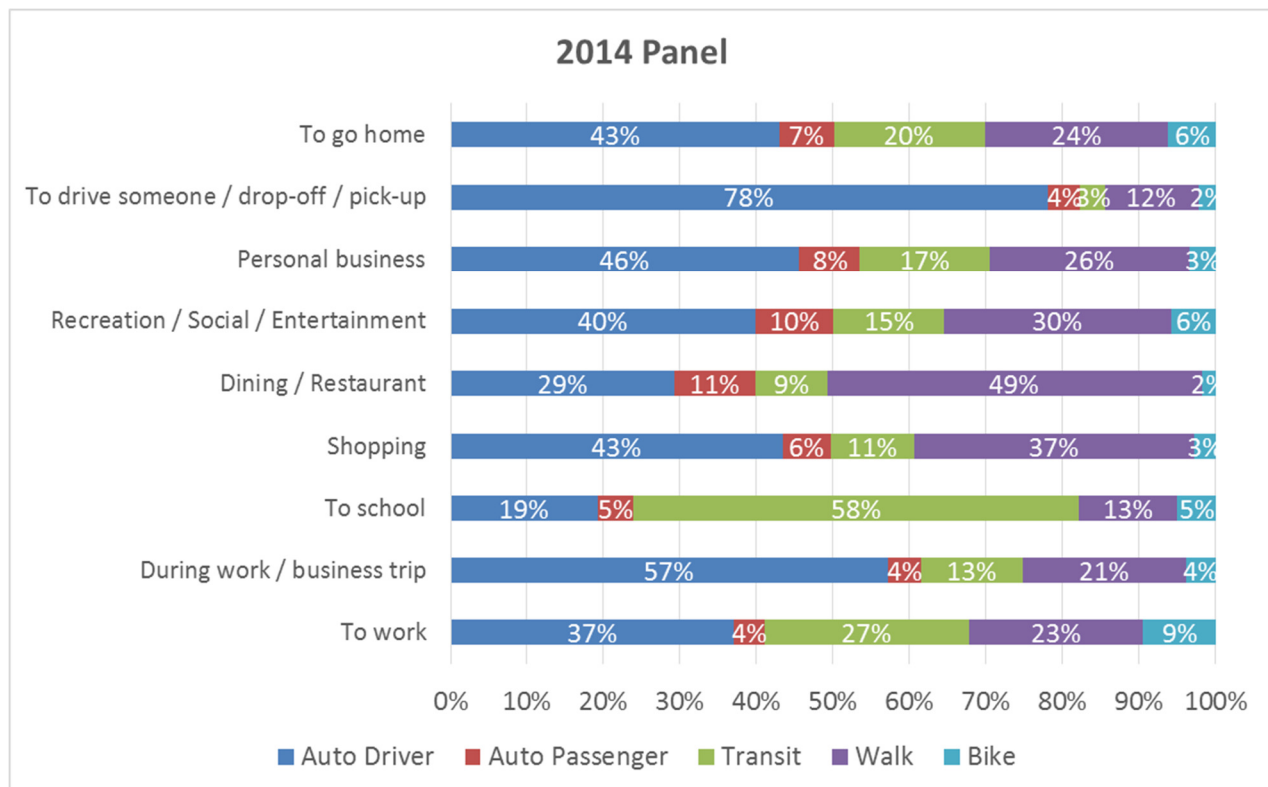
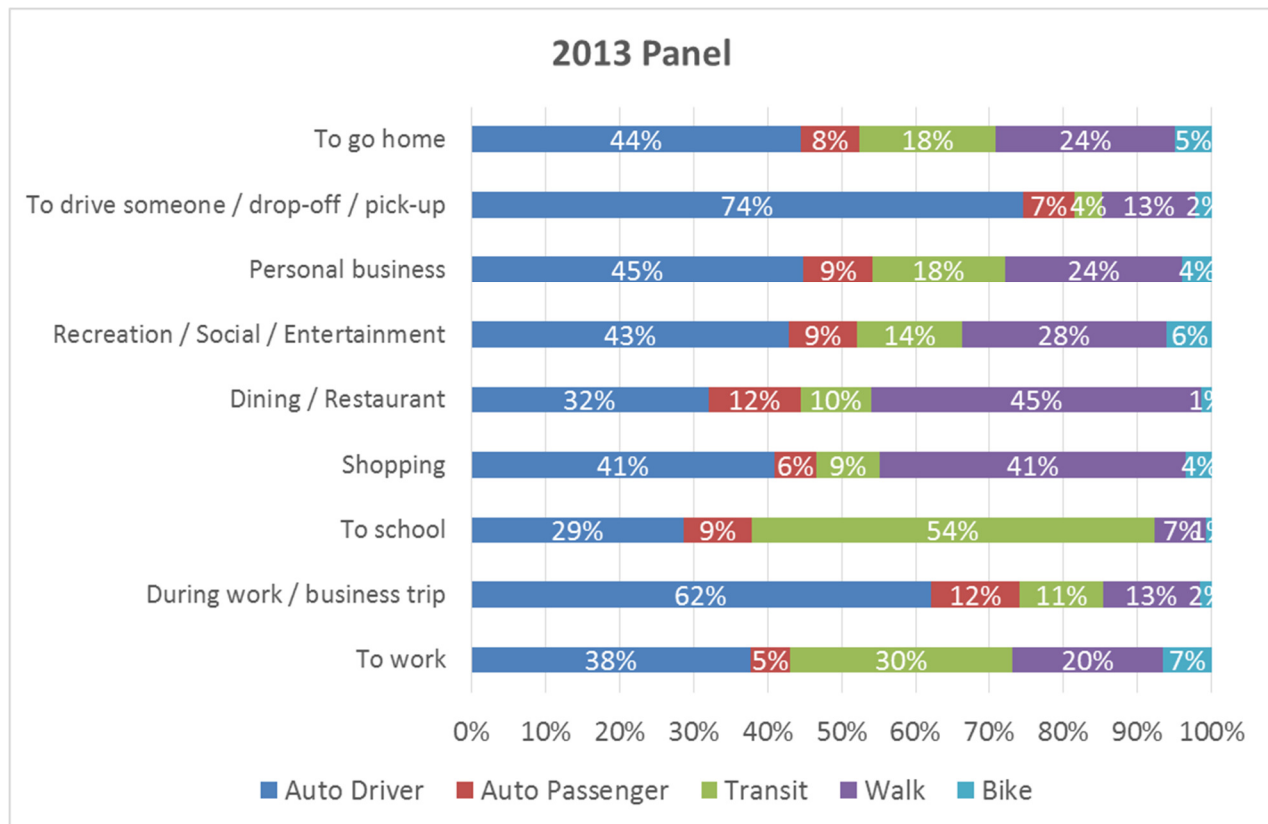
2014 Panel Trips, Excluding Unknown (%)



- During work / business trip
- Shopping
- Recreation / Social / Entertainment
- To drive someone / drop-off / pick-up

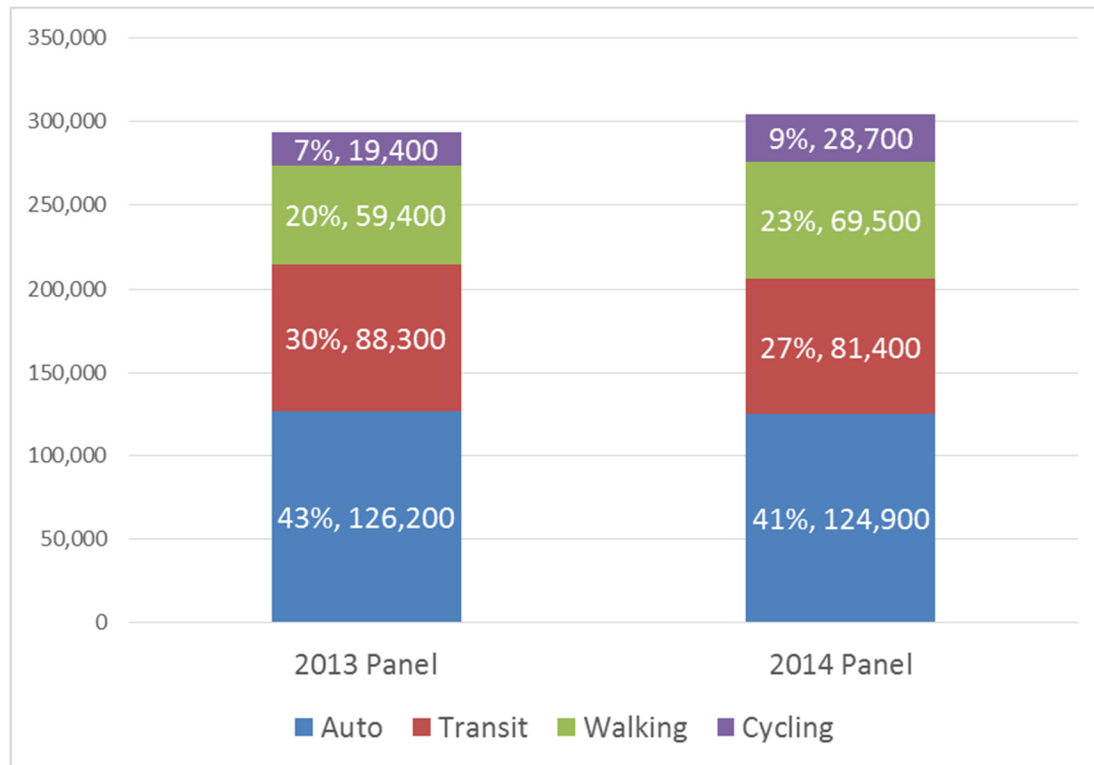
**Exhibit 4-8** shows a detailed comparison of the mode share by trip purpose. Walking mode share exhibits growth in both discretionary trips and regular commuting trips (to work/to school).

The largest increase in walk/bike/transit mode share appears in the “To school” journey, where 76% of the 2014 panel reported transit/walk/bike trips as opposed to 62% in 2013.

**Exhibit 4-8 – Mode Share by Trip Purpose**

**Exhibit 4-9** is a comparison between the 2013 and 2014 Panel Survey trips to work. There has been a 3.8% increase in work trips (293,300 to 304,500). The 2014 Panel Survey shows higher shares of active trips (walking and cycling) and lower personal vehicle mode shares, both proportionately and in absolute terms.<sup>7</sup>

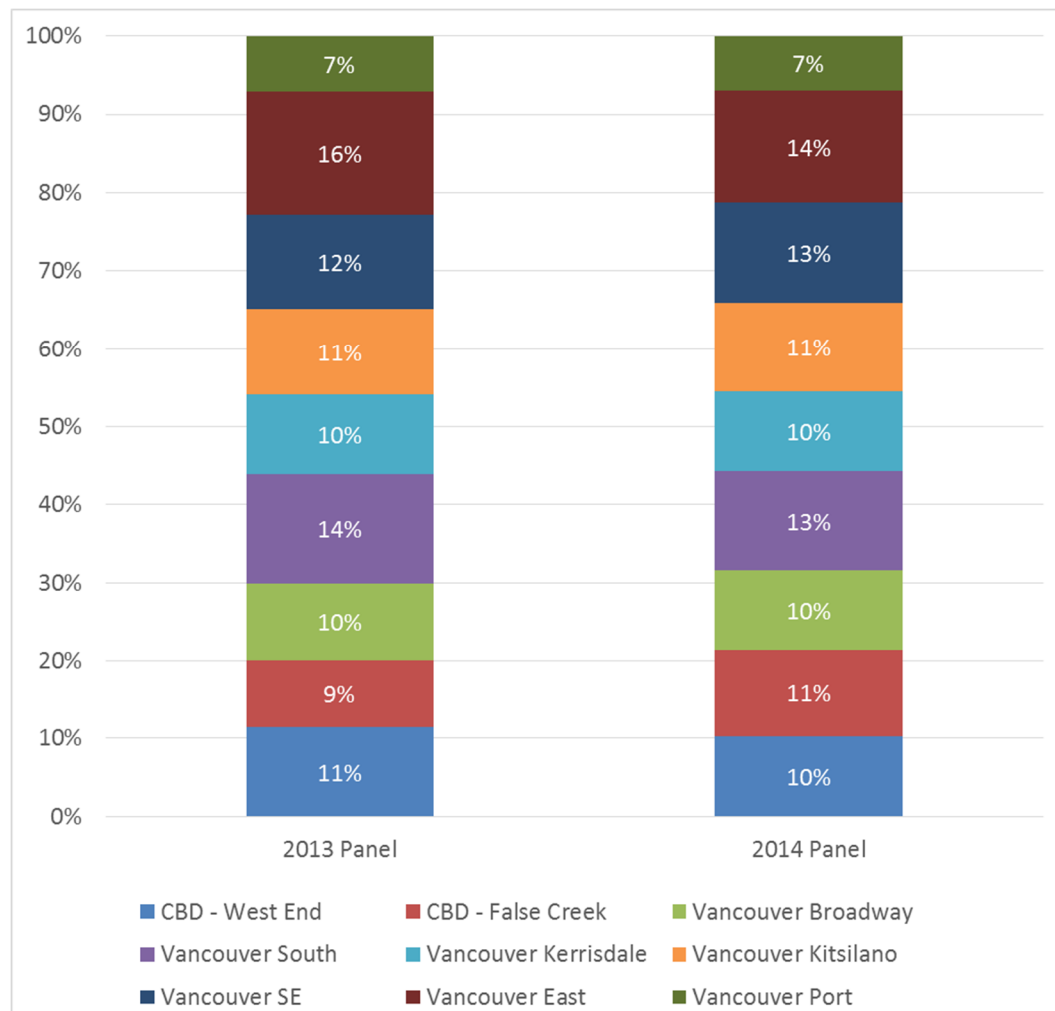
**Exhibit 4-9** – Comparison of Panel Survey Trips to Work



<sup>7</sup> Results should be treated in context of small sample sizes, especially for the bicycle trip to work subset.

**Exhibit 4-10** breaks down the total number of trips by transportation zone. The 2013 and 2014 Panel Surveys are very similar in terms of the trips from each of these zones.

**Exhibit 4-10** – Total Trips Breakdown by Transportation Zone

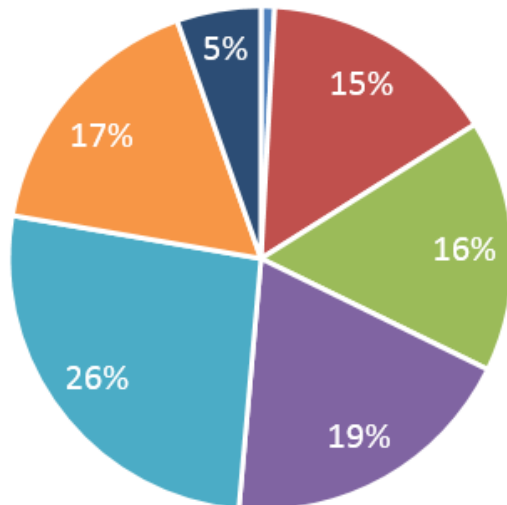


## 4.4 Time of Day

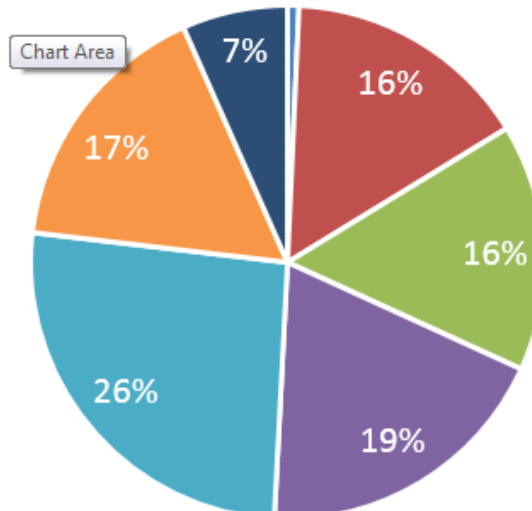
A comparison of time of day travel is shown in **Exhibit 4-11**. The Panel Survey and Trip Diary are quite similar, with marginally more late night trips in the 2014 Panel Survey.

**Exhibit 4-11** – Trip Distribution by Time of Day shift to have 2013 first then 2014

2013 Panel Trips Excluding Unknown (%)

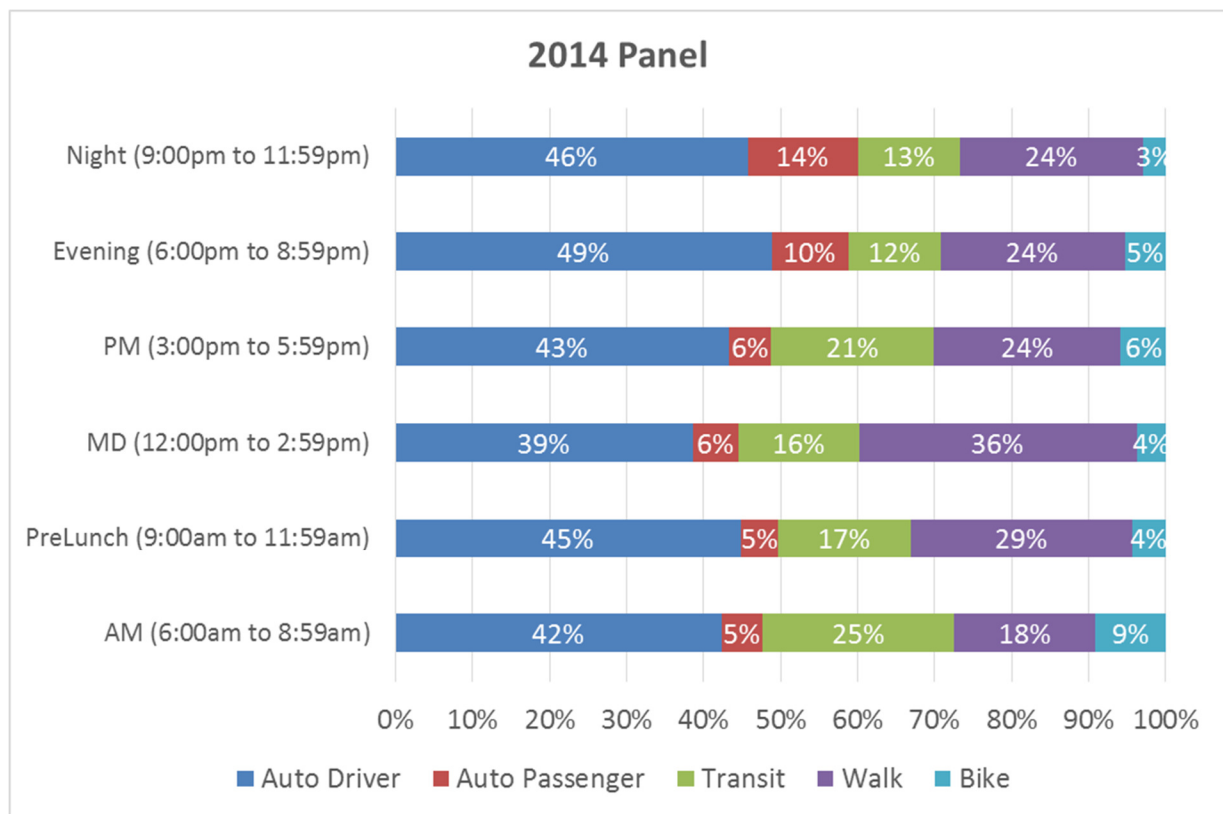
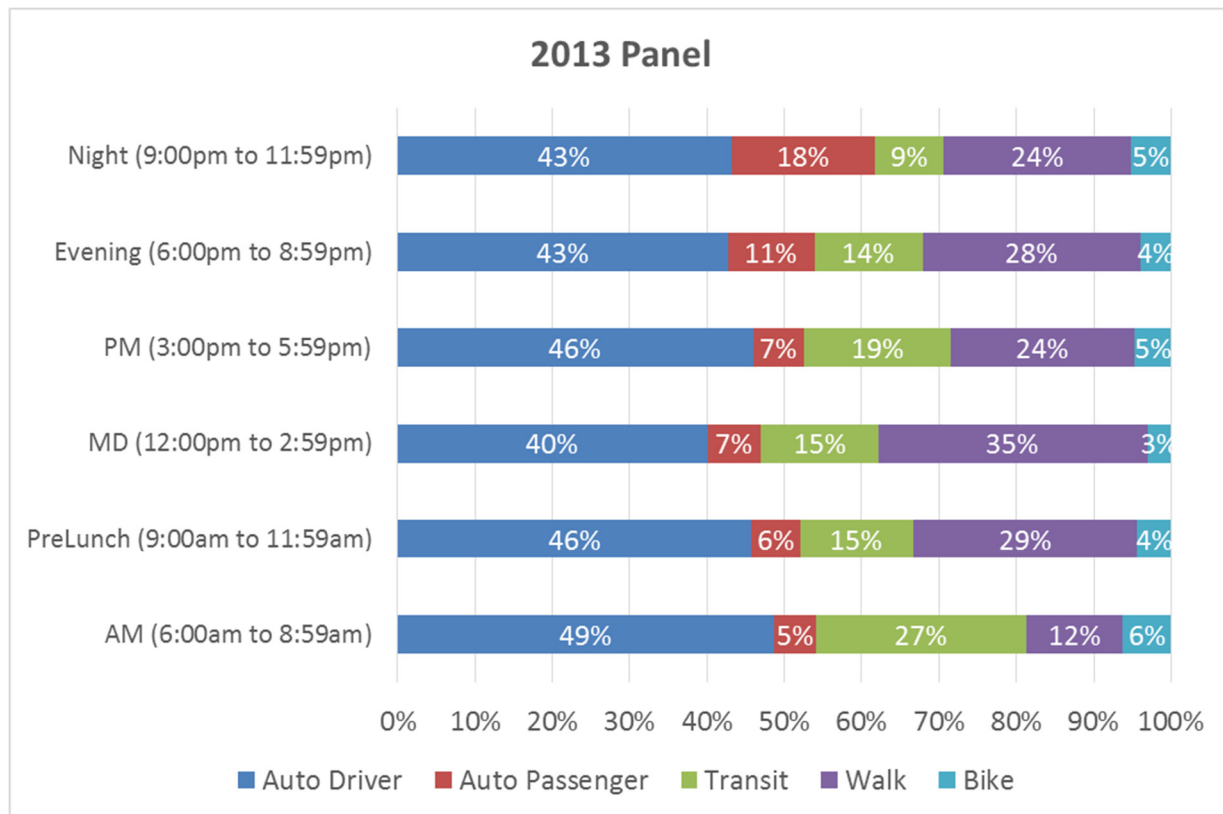


2014 Panel Trips Excluding Unknown (%)



- OWL (12:00am to 5:59am)      ■ AM (6:00am to 8:59am)
- PreLunch (9:00am to 11:59am)      ■ MD (12:00pm to 2:59pm)
- PM (3:00pm to 5:59pm)      ■ Evening (6:00pm to 8:59pm)
- Night (9:00pm to 11:59pm)

**Exhibit 4-12** breaks down mode share by time of day for the 2013 and 2014 Panel Surveys as well as the 2011 Metro Vancouver Trip Diary Survey. The higher walking mode share during the pre-lunch, midday, and early afternoon periods reinforces the conclusion that more discretionary trips are being reported.

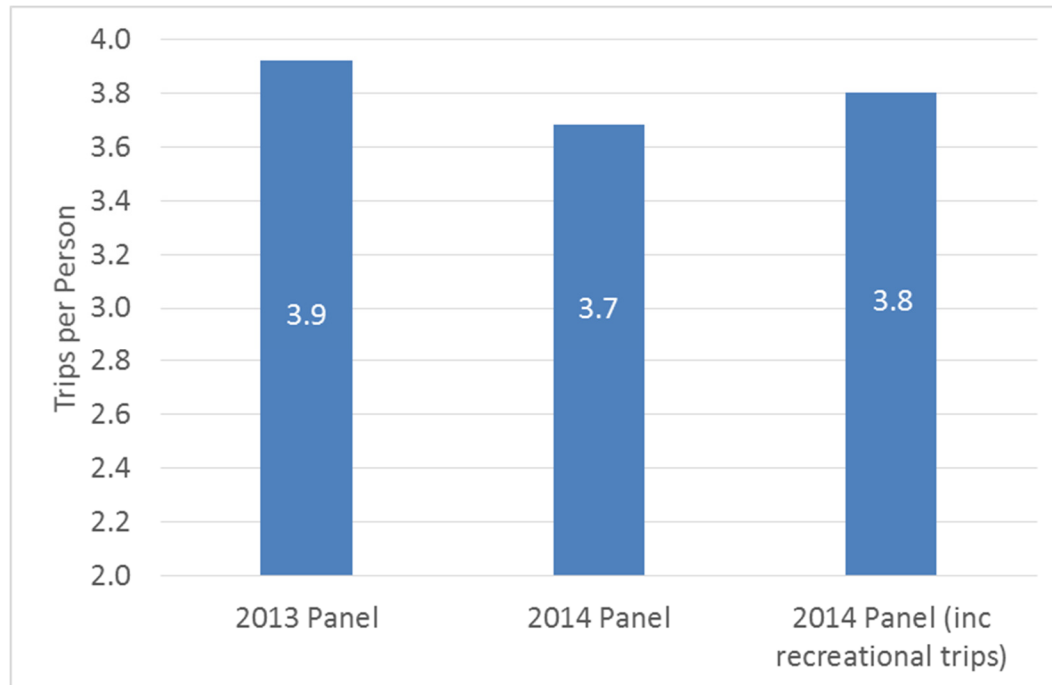
**Exhibit 4-12 – Mode Share Distribution by Time of Day**

## 4.5 Trip Rates

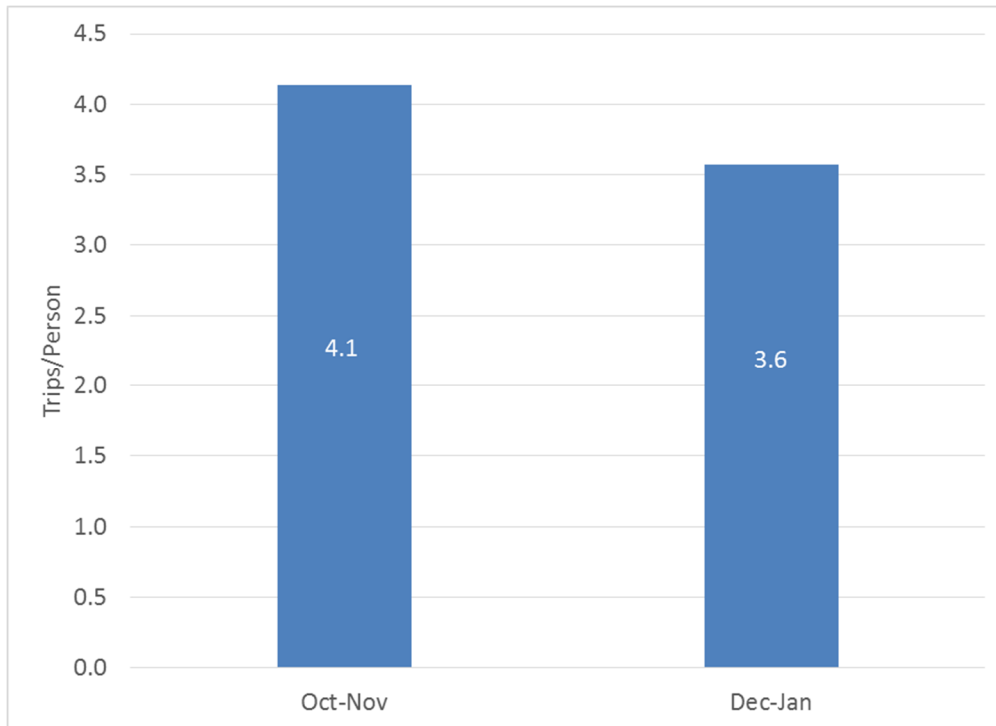
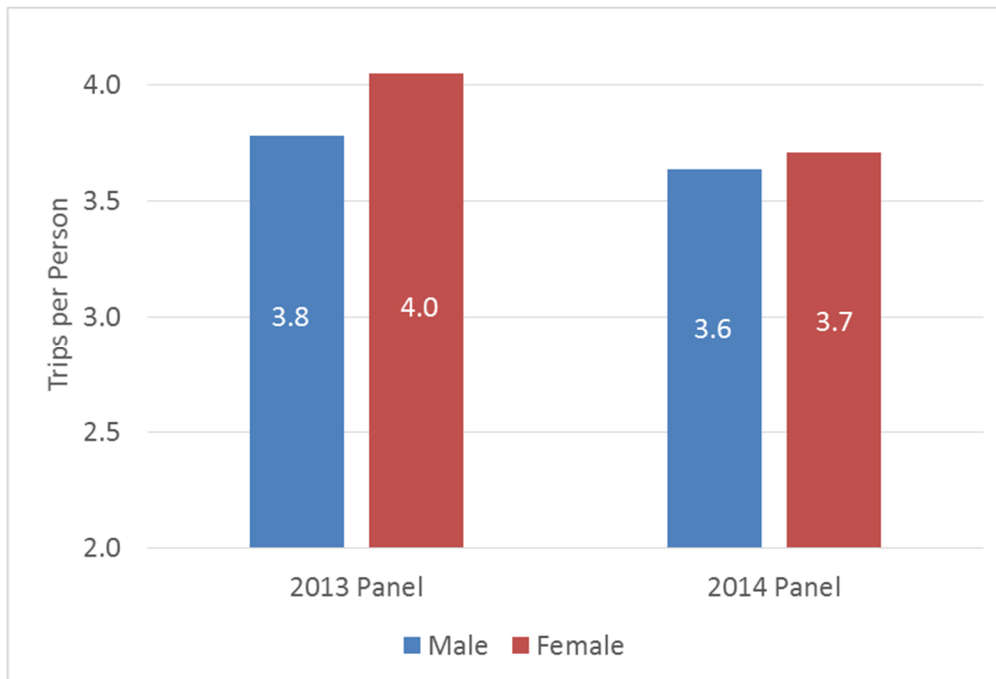
**Exhibit 4-13** compares overall trip rates<sup>8</sup> for the 2013 and 2014 Panel Surveys. In 2014, recreational trips with the same start/end points (e.g. walking the dog, jogging) were introduced to the survey instrument as an exclusive type of trip. The 2014 panel respondents made slightly fewer trips, even when including the new recreational trip subset. One possible explanation is the seasonal variation between the two surveys as mentioned previously in Section 2-2. **Exhibit 4-14** compares trip rates for people who completed the panel survey in October-November 2014 versus December 2014 - January 2015. The figure clearly shows that people make fewer trips in December and January. This hypothesis is also supported by traffic and transit counts that display similar seasonal variations. It is also important to note that the 2013 Panel survey respondents potentially reported recreational trips even though the survey instrument excluded them from the definition of a trip.

Other general trip rate trends are quite similar between the two surveys, with females making more trips than males and a higher trip rate amongst the 45+ age cohort as shown in **Exhibits 4-15** and **4-16** respectively. **Exhibit 4-17** shows the trips rates by neighbourhood zone which varies significantly showing that some communities seem to make more trips.

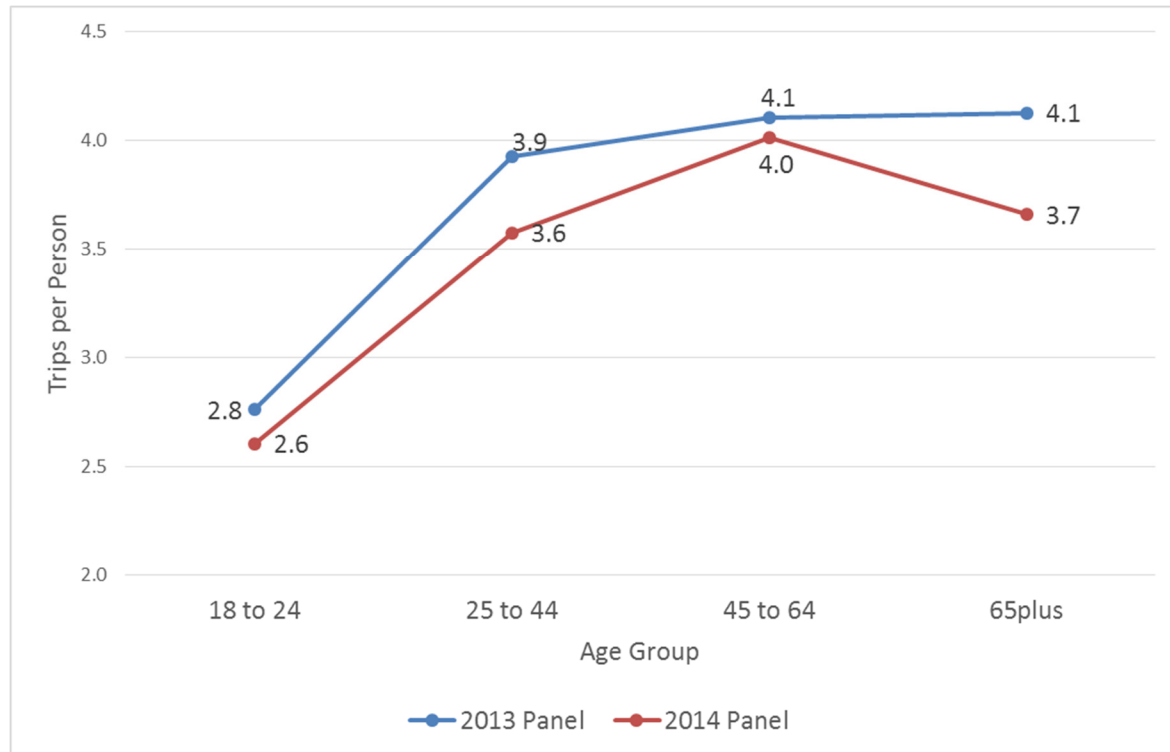
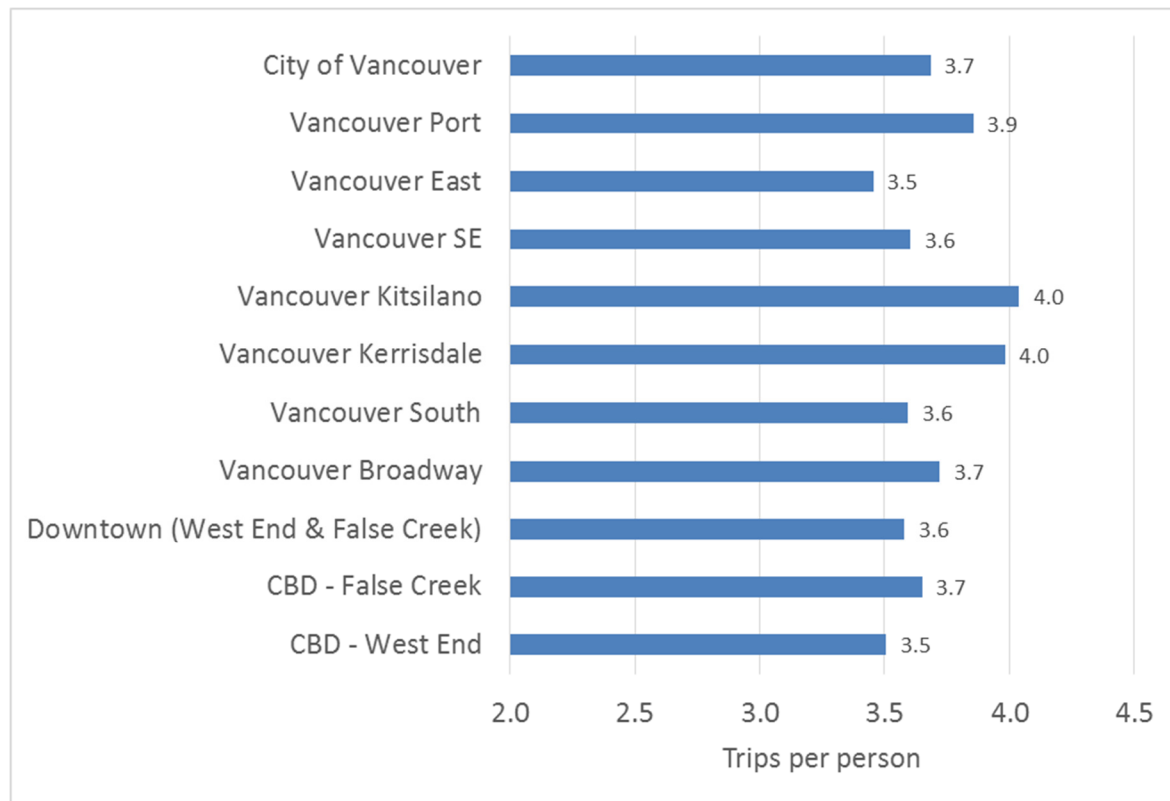
**Exhibit 4-13 – Trip Rates (Ages 18+)**



<sup>8</sup> Trip rate is the number of trips that each person makes on a daily basis with a trip is defined as travel from one origin to another destination by a certain mode for a particular purpose.

**Exhibit 4-14** – Seasonal Variations in Trip Rates**Exhibit 4-15** – Trip Rates by Gender



**Exhibit 4-16** – Trip Rates by Age Group**Exhibit 4-17** – Trip Rates by Transportation Zone

## 4.6 Vehicle-Kilometres Travelled

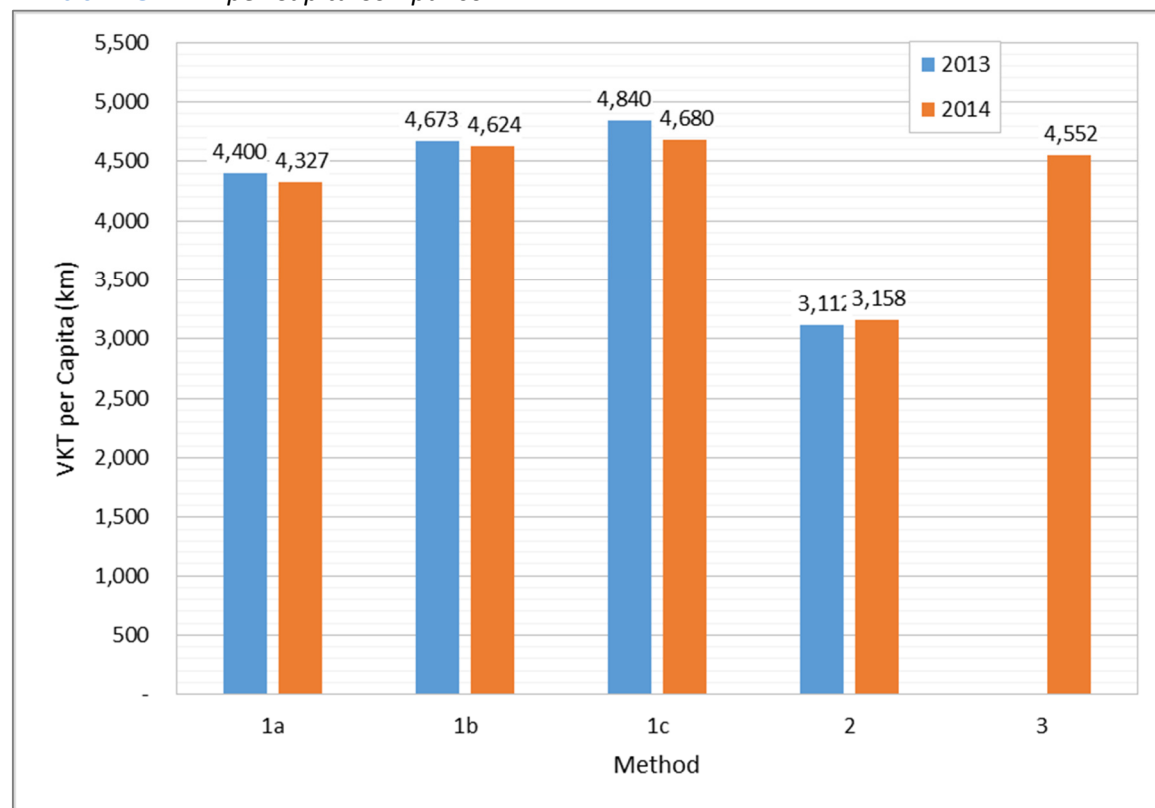
The Greenest City action plan and Transportation 2040 have set a goal to reduce the average distance driven per resident by 20% compared to 2007 levels. This measurement is referred to as vehicle-kilometres travelled (VKT). It is important to track whether VKT is trending in the right direction to meet this goal.

CH2M Hill undertook a VKT analysis using a variety of methods described in the bullets below. Methods 1a, 1b and 1c represent three methods to estimate VKT from the AirCare Program. [Exhibit 4-20](#) shows the Air Care VKT model which estimates the annual kilometres travelled per vehicle for each vehicle age category (2010 is latest year provided by AirCare; 2013 and 2014 data was estimated based on the odometer difference between vehicles in 2013 and 2011 and 2014 and 2012 respectively). This program has been used by various local agencies to estimate Metro Vancouver's VKT and GHG emissions for many years. As this program has been discontinued, it cannot be used to track VKT in the future. As such, two additional methods are proposed to track VKT; Method 2 which relied on the panel surveys' trip origin-destination latitude/longitude coordinates and Regional Transportation Model and Method 3 which used odometer readings from the 2013 and 2014 panel surveys. Methods 2 and 3 were benchmarked against the AirCare Program data estimates (Method 1 a,b and c) to determine which of the two is more reliable for tracking VKT with subsequent panel surveys. ICBC vehicle registration data was used in the calculation of VKT for all methods except Method 2.

The results are summarized in [Exhibit 4-18](#). A graphical comparison of the annual VKT per capita is presented in [Exhibit 4-19](#). In the 2013 Panel Survey, the initial VKT computation was only done following the EMME methodology.

**Exhibit 4-18 – VKT Comparison**

Method	Annual VKT (Billions)		Annual VKT per capita	
	2013	2014	2013	2014
1a Air Care VKT Model + Panel Survey	2.87	2.85	4,400	4,327
1b ICBC Vehicle Data and AirCare Data Odometer Reading	3.05	3.04	4,673	4,624
1c ICBC Vehicle Data and Air Care VKT Model	3.16	3.08	4,840	4,680
2 EMME	2.03	2.08	3,112	3,158
3 Panel Survey Odometer Reading	-	2.08	-	3,158

**Exhibit 4-19 - VKT per Capita Comparison****Method 1a – AirCare VKT Model**

- Calculated the average age of vehicles from the 2013 and 2014 panel surveys. The average age for both datasets was approximately **10.2** and **10.5 years** respectively.
- Used [Exhibit 4-20](#) to determine the average kilometres travelled annually per vehicle in 2013 and 2014 for vehicles of age 10.2 and 10.5 (approx. **10,780** and **10,600** kilometres)
- Multiplied the average distance travelled by the total number of vehicles and used StatsCan population estimates to calculate annual VKT and annual VKT per capita.
- This method will probably provide a figure on the lower side as the average age of vehicles in the panel survey is slightly older than the average age as determined by the other data sources (ICBC).
- Annual VKT in 2013 and 2014 is calculated as 2.87 and 2.85 billion and VKT per capita for 2013 and 2014 is 4,400 km and 4,327 km, respectively.

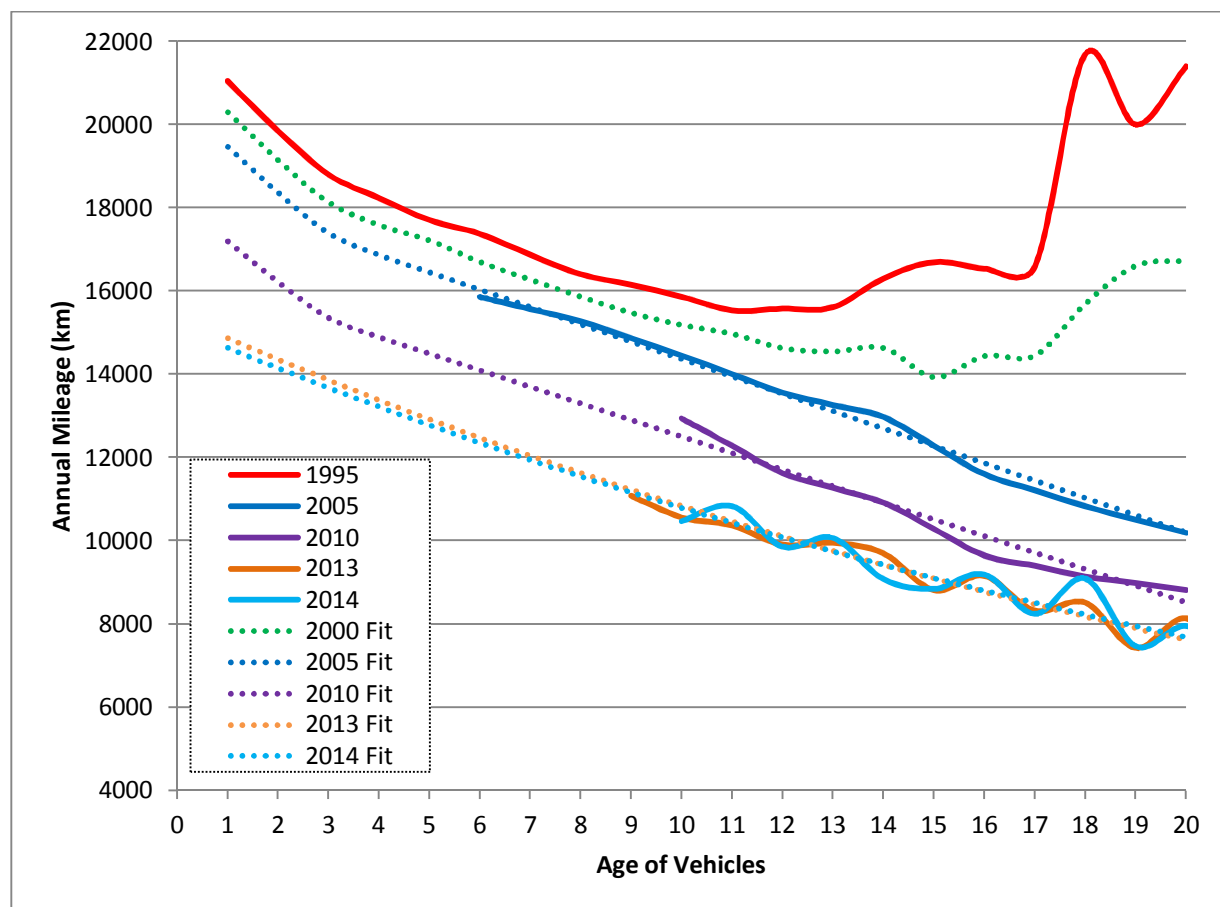
**Method 1b – ICBC Vehicle Data and AirCare Data Odometer Reading**

- The ICBC data provided the number of actively insured passenger vehicles (registered in Vancouver) by the vehicle's model year. Data was provided for the following years: 1999, 2004, 2007, 2008, and 2011 to 2014.
- The age of each vehicle was estimated from the vehicle model year. The average vehicle age is estimated at approximately **9.2** and **9.3 years** for 2013 and 2014, respectively.
- Extracted odometer readings for Vancouver-based matched vehicles in 2012 and 2014 and calculated the average annual kilometres travelled per vehicle. The sample was approximately 40,000 vehicles or 15% of all Vancouver based vehicles.
- Similarly, data from 2011 and 2013 was used to determine values for 2013.
- A trend-line was developed and used to estimate the average annual VKT for each vehicle model age. This is shown as the 2013 Fit line and the 2014 Fit line in [Exhibit 4-20](#).

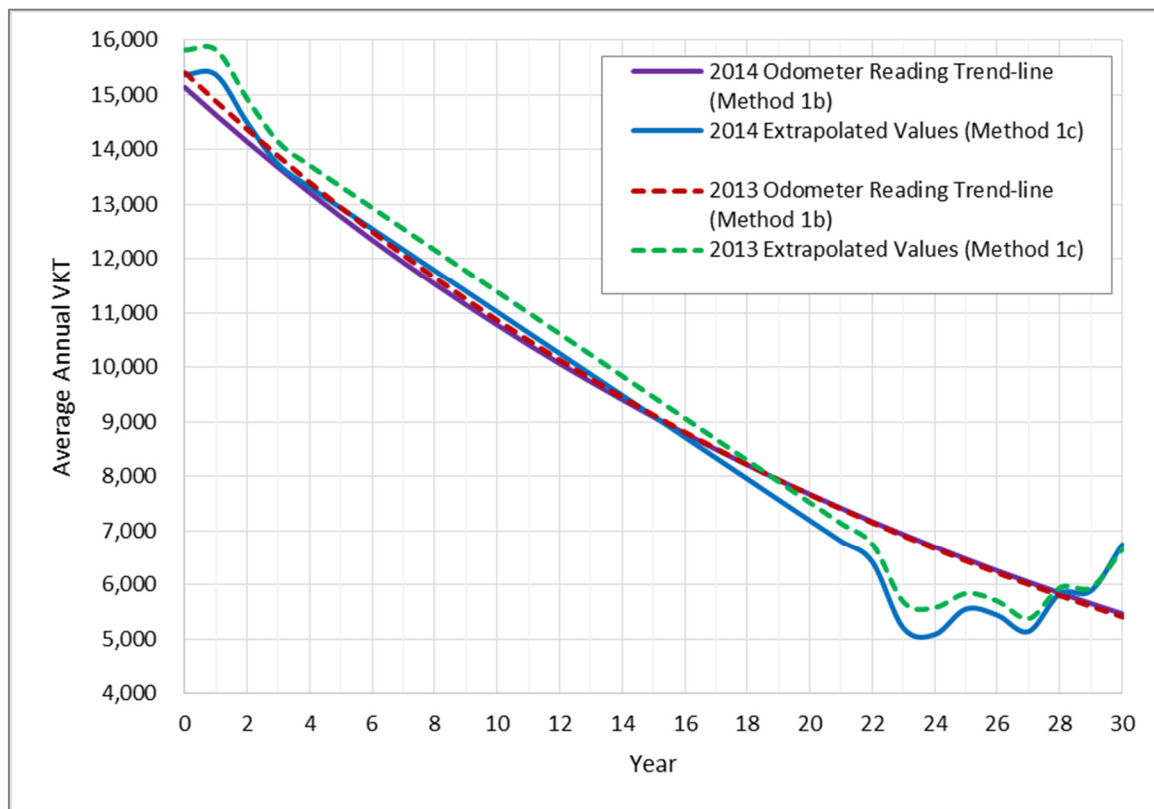
- Calculated the number of active passenger vehicles registered in Vancouver using ICBC data (i.e. only included insured vehicles and excluded commercial vehicles); approx. **268,000**
- Multiplied the average distance travelled by the total number of vehicles, for each vehicle model age, and used StatsCan population estimates to calculate annual VKT and annual VKT per capita.
- Using the Air Care data alone provides a figure on the lower side as the average age of vehicles is approximately **14.5 years** (since newer vehicles -2007 models and after- are not available in the dataset). Vehicles of that age usually travel less mileage based on [Exhibit 4-20](#) (2010 actual). However, using the trend-line from this data along with ICBC data, the age of vehicles is adjusted to better represent the population. This allows for the calculation of annual VKT and VKT per capita. Annual VKT in 2013 and 2014 is calculated as **3.05** and **3.04 billion** and VKT per capita for 2013 and 2014 is **4,673 km** and **4,624 km**, respectively.

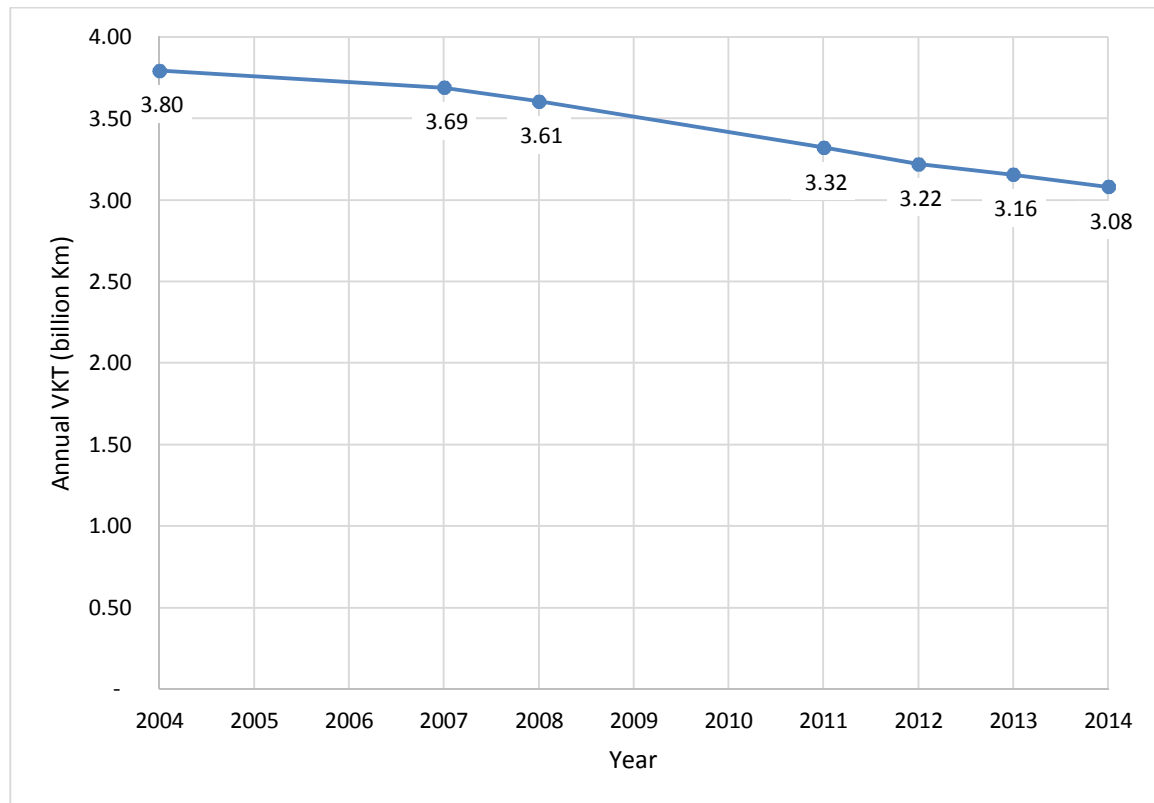
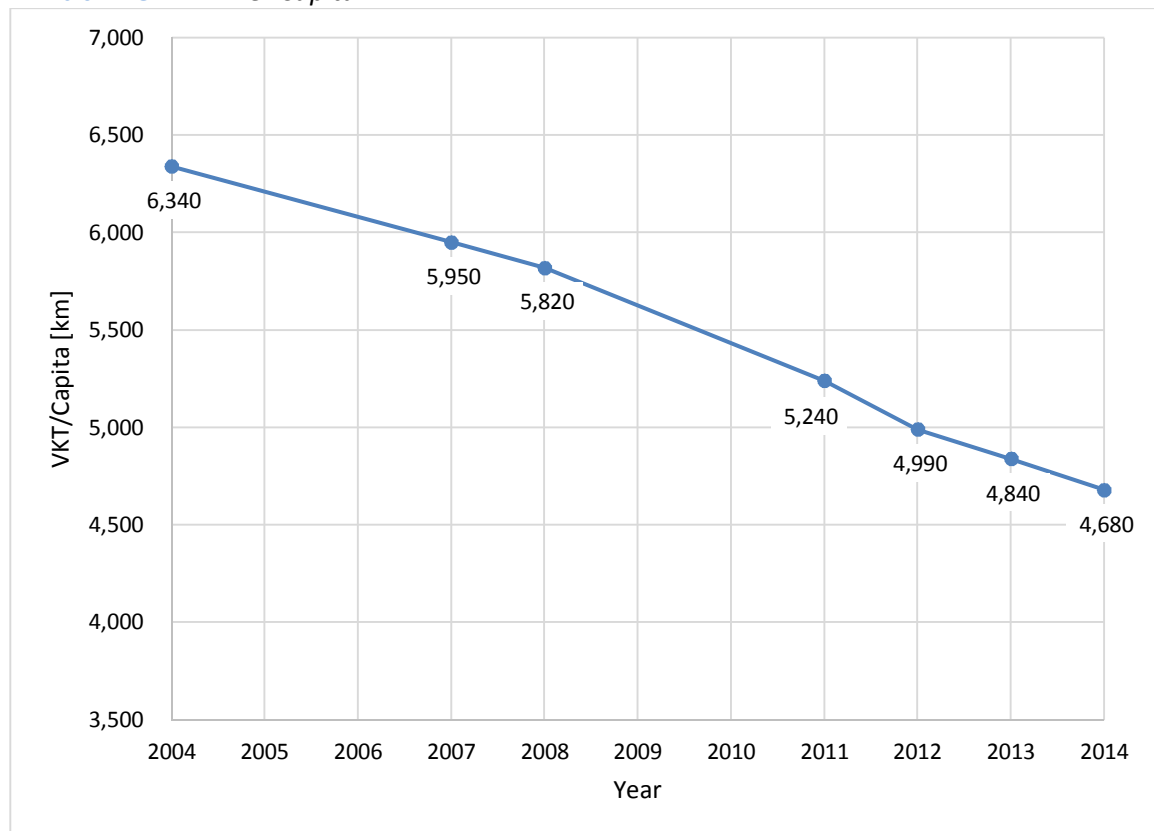
#### Method 1c – ICBC Vehicle Data and Air Care VKT Model

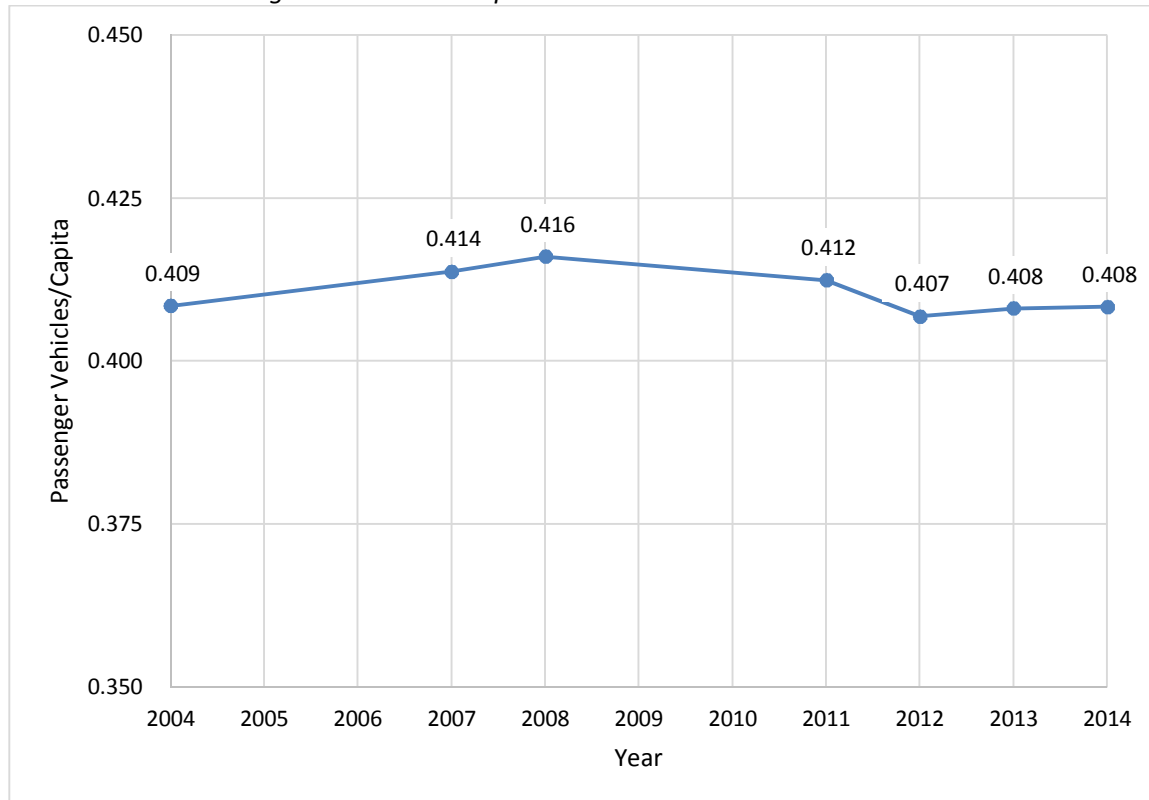
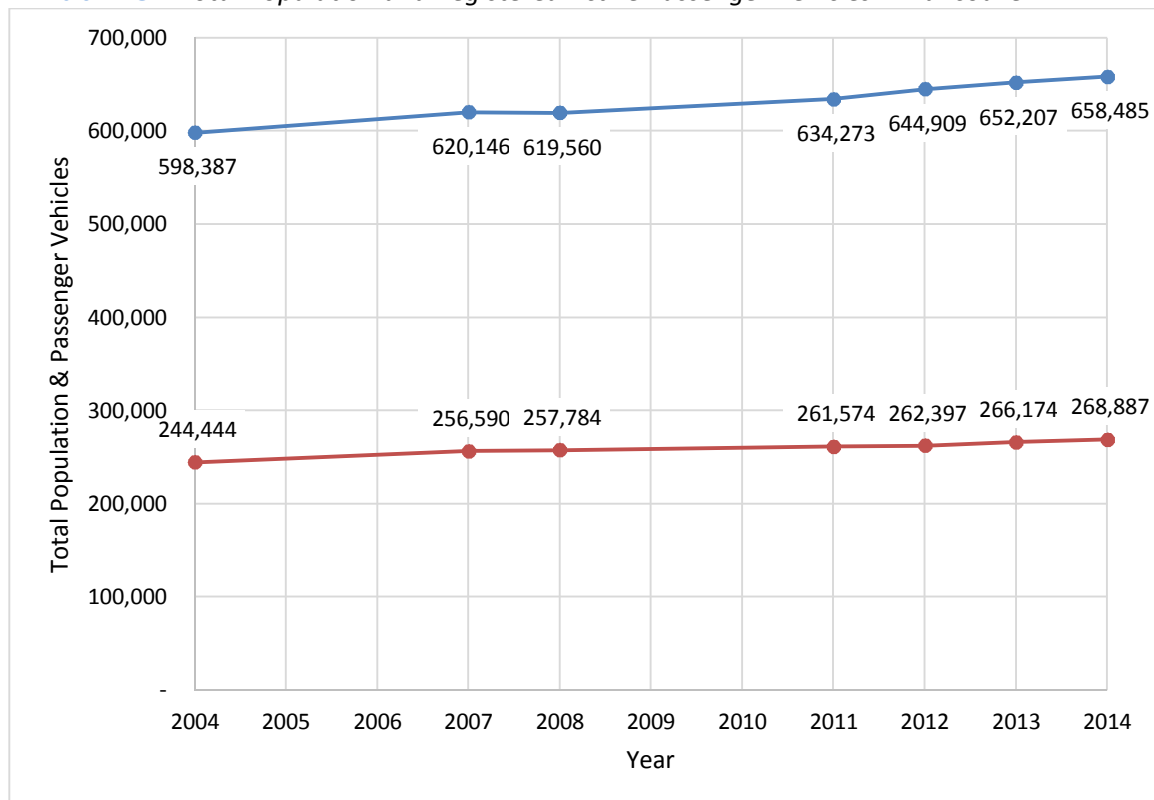
- The ICBC data provided the number of actively insured passenger vehicles (registered in Vancouver) by the vehicle's model year. Data was provided for the following years: 1999, 2004, 2007, 2008, and 2011 to 2014.
- The age of each vehicle was estimated from the vehicle model year. The average vehicle age is estimated at approximately **9.2** and **9.3 years** for 2013 and 2014, respectively.
- The Air Care VKT Model ([Exhibit 4-20](#)) as expanded (by extrapolation) for the years with ICBC data. The extrapolated data for 2014 was compared against the data from the odometer readings that were extracted for Method 1a above. The readings for each vehicle model age were calculated and plotted. The trend-line through the observed points plots well against the 2014 extrapolated values as seen in [Exhibit 4-21](#) below.
- **Methods 1b and 1c are relatively similar in terms of approach and result. Method 1c was chosen eventually to back cast to 2007 to assess the progress towards the VKT target.**
- The annual VKT was calculated at 3.16 billion and 3.08 billion in 2013 and 2014 respectively. (see [Exhibit 4-22](#)). Using StatsCan population estimates for Vancouver, the VKT per capita was also calculated ([Exhibit 4-23](#)). The VKT per capita numbers for 2013 and 2014 are **4,840** and **4,680 km**.
- The number of passenger vehicles per capita was also studied with this data and it has remained relatively steady over the years. [Exhibit 4-24](#) shows the values over the same period time as above.
- The total population and number of registered active passenger vehicles is shown in [Exhibit 4-25](#) – Total Population and Registered Active Passenger Vehicles in Vancouver
- . Both have growth by 10% from 2004 to 2014, suggesting that the number of vehicles per capita has not changed significantly in that time period.
- **Based on this information in 2014, the VKT target was met by surpassing a 20% reduction from 2007 levels.**

**Exhibit 4-20** – AirCare VKT Model

**Exhibit 4-21** - Average Annual VKT Comparison (Method 1a vs. Method 1c)



**Exhibit 4-22** – Annual VKT (billion km) per year**Exhibit 4-23** – VKT Per Capita

**Exhibit 4-24** – Passenger Vehicles Per Capita**Exhibit 4-25** – Total Population and Registered Active Passenger Vehicles in Vancouver



## Method 2 – EMME Model

- Used the latitude/longitude coordinates from the panel survey to determine the origins and destinations of the auto driver trips using the EMME model's 641 zone system and the corresponding distances between the zones.
- The daily VKT figure was then annualized by multiplying the figure by 365. The 365 annualization figure was used to account for weekend trips not captured in the panel survey and which can be longer than average weekday trips. The average VKT per capita was determined using total Vancouver population estimates from StatsCan.
- The EMME method will probably underestimate the VKT as trips outside of the 641 zones were excluded. Also, trips that were not geocoded properly were excluded. Finally, EMME will most likely underestimate the trip length travelled within a zone especially in cases where the zones are large.
- The EMME model does not seem to be a reliable tool for a comparative analysis of VKT (year over year growth). The trend from the model is not consistent with what was observed from the AirCare database which is a robust sample of vehicle usage in the City. However, over a longer period of time it may be a reasonable tool for comparing changes in VKT. Based on the EMME analysis, Vancouver related VKT increases by 2% in 2014. Annual VKT per capita increased by 1.5% from 3,112 kilometres to 3,158 kilometres. However the other methods that were benchmarked to the AirCare data all indicate a downward trend.

## Method 3 – Panel Survey Odometer Reading

- Used the 2013 and 2014 panel survey to determine the average annual kilometres travelled for returning survey respondents. After some data cleanup, this method provided a sample of approximately 800 odometer readings. The average was approximately **11,200** vehicle-kilometres travelled per vehicle. The average vehicle age was approximately **10 years**.
- Multiplied the average distance travelled by the total number of vehicles and used StatsCan population estimates to calculate annual VKT and annual VKT per capita.
- This results in an annual VKT for 2014 of **3.00 billion** and an annual VKT per capita of **4,552 km**.

Going forward, Method 3 appears to provide the most reliable method to track VKT for the following reasons:

- The panel survey provides an adequate sample size statistically to estimate the average kilometres travelled per vehicle in Vancouver using the odometer readings of returning people.
- Method 3 is dynamic. In other words, the average kilometres travelled will change year over year based on panel survey outcomes.
- Method 3 approximates the VKT outcomes of Air Care data Methods 1b and 1c, which we believe provides the best estimate of VKT, much better than Method 2. However, with the Air Care program no longer in use, there will no new data available and continuing to extrapolate in to the future from the 2005 and 2010 data is not the best approach.

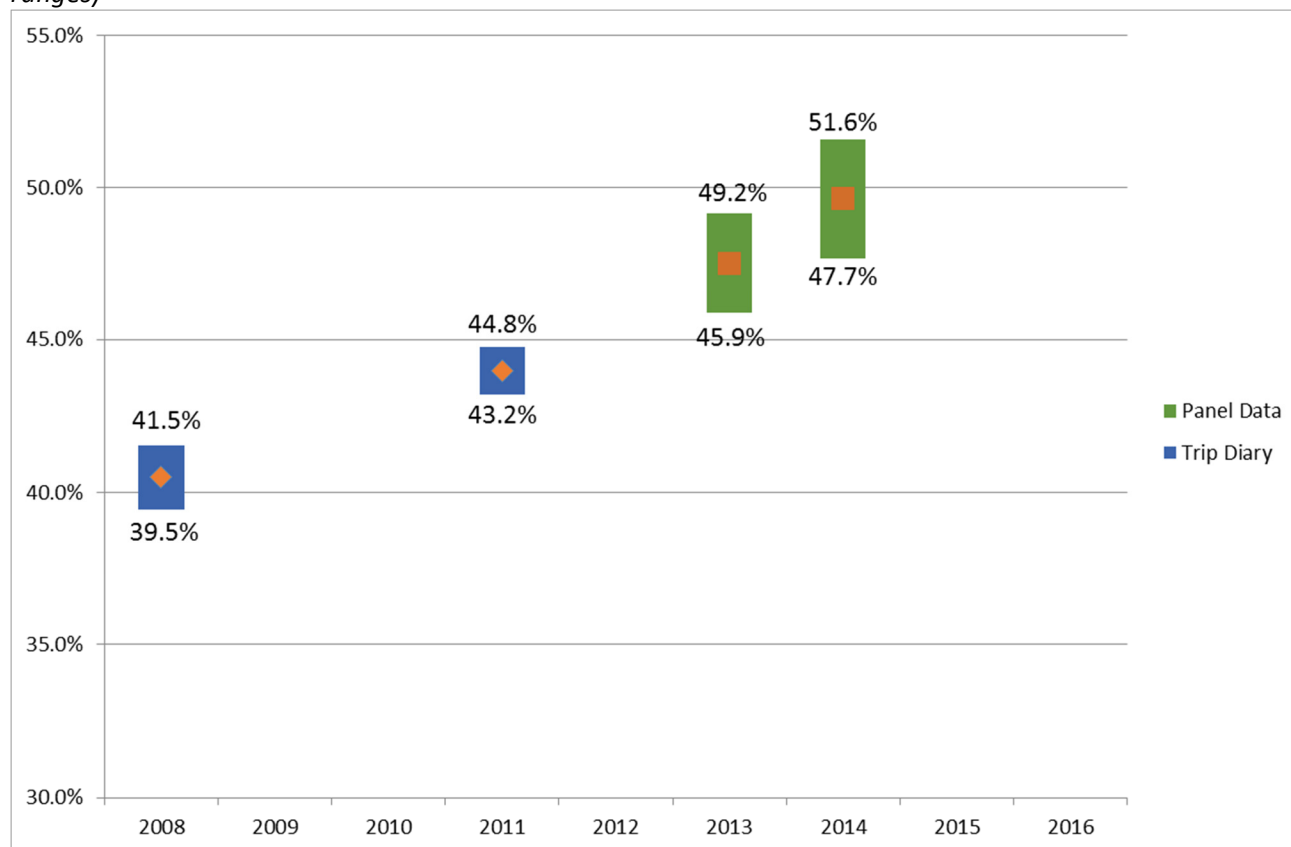
## 4.7 Walk/bike/transit Mode Trend Analysis

The Panel Survey has provided a valuable indicator for tracking trends in of the percentage of people walking, biking and taking transit. [Exhibit 4-26](#) shows the trend from 2008 to 2014 for the Vancouver residents using information from the 2008 and 2011 Trip Diary Surveys and the 2013 and 2014 Panel Surveys. This chart clearly shows an upward trend in the use of walking, cycling and transit for Vancouver

residents. Based on the panel surveys, travel by non-auto modes increased by 2.1% from 48% to 50%. This is a statistically significant positive increase in walk/bike/transit mode share at the 90% confidence level.

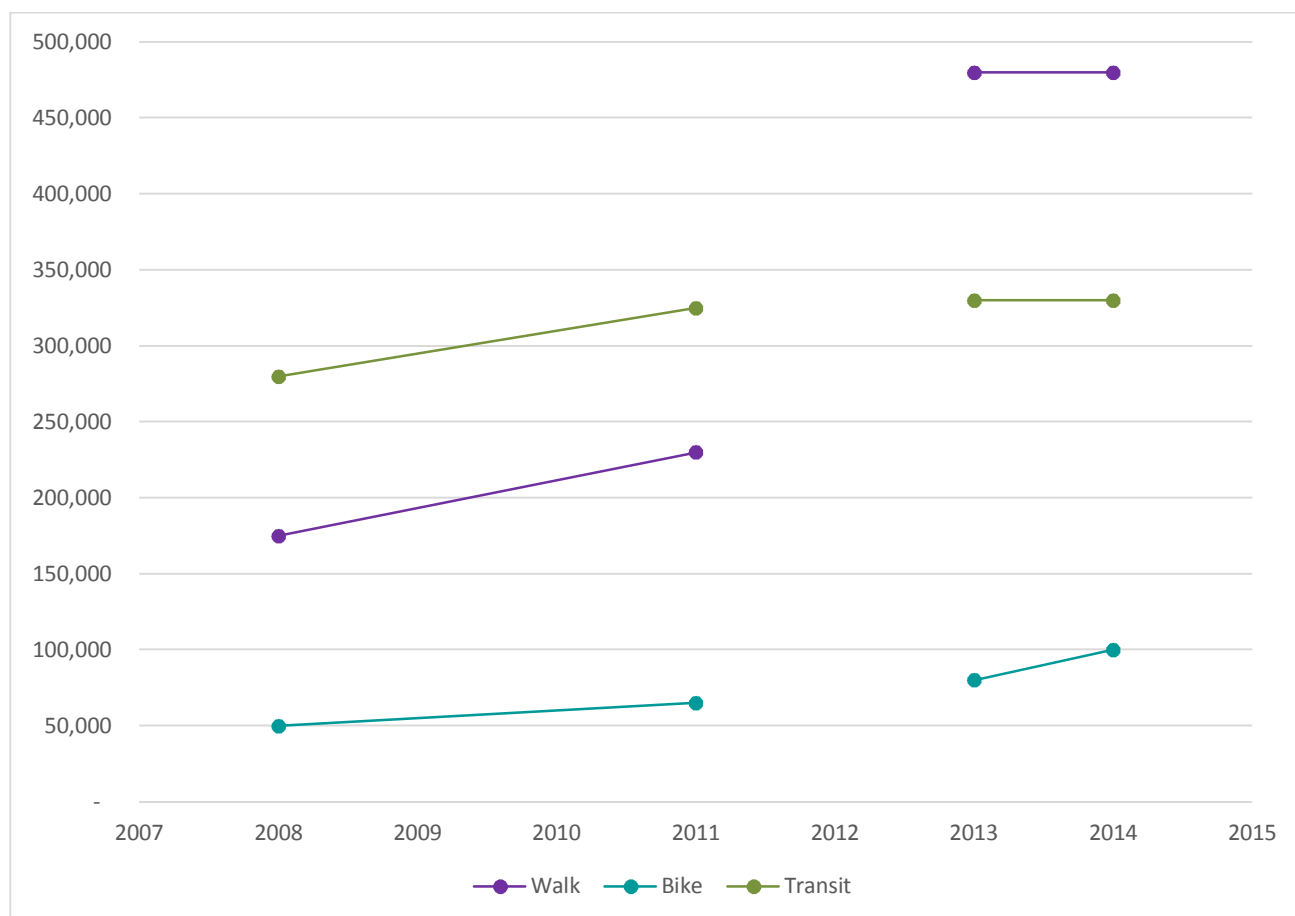
Extrapolating the travel survey trends to the future would suggest that this trend should continue with the further densification of Vancouver and, pending the results of the 2015 Metro Vancouver Transportation and Transit Plebiscite, expansion of transit services and walking and cycling facilities. This is a strong indication that the City of Vancouver is on track to meet its 2020 mode share target set out in the Greenest City Action Plan and Transportation 2040 well in advance of 2020.

**Exhibit 4-26** – Trend in Walk/Bike/Transit Mode Share from Trip Diary and Panel Survey (high and low ranges)<sup>9</sup>



**Exhibit 4-27** presents the mode splits by walking, cycling, and transit modes. Cycling trips grew by 19% and cycling mode share grew by 1% from 2013 to 2014. Meanwhile, walking and transit mode shares were stable from 2013 to 2014.

<sup>9</sup> The Panel Survey has wider ranges in comparison to the trip diary due to the lower number of samples.

**Exhibit 4-27** – Trends in Walk, Bike, Transit Mode Shares from Trip Diary and Panel Survey

## 4.8 Health Status

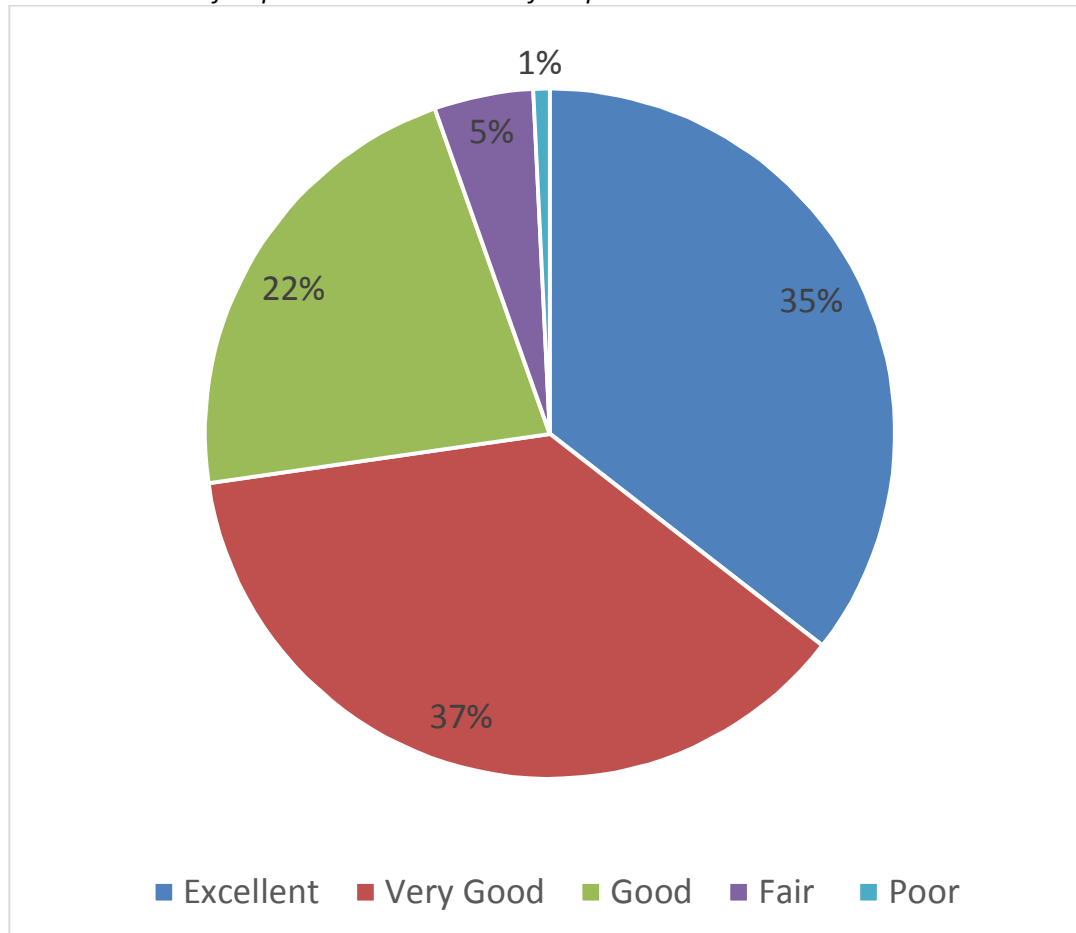
The My Health My Community<sup>10</sup> Survey was conducted in 2013-2014 across the Lower Mainland to better understand community health as it related to transportation choices (i.e. commute to work/school). The survey is part of an emerging field of study exploring the ways in which transportation choices impact our lifestyle and health. Evidence from other jurisdictions shows that well-planned and accessible transportation systems can increase physical activity, improve air quality and reduce vehicle-related injuries, leading to better physical and mental health.

In 2014, a question was introduced to the panel survey asking respondents to report on their perceived health. Self-reported overall health assessments are simple but well-established as having a strong correlation with overall mortality risk and they capture aspects of health that are difficult to capture, such as disease severity, social function, psychological reserves, etc. By incorporating a health-related question into the panel survey, the City will be able to track trends in health vs. mode choice over time.

**Exhibit 4-28** shows a summary of respondents' self-reported health status; 72% of respondents indicated they were in very good or excellent health. This generally agrees with the findings of the Canadian Community Health Survey (Fraser Health Authority + Vancouver Health Authority subsets).<sup>11</sup>

<sup>10</sup> My Health My Community is a non-profit partnership between Vancouver Coastal Health (VCH), Fraser Health (FH) and the eHealth Strategy Office (eHSO) at the University of British Columbia (UBC).

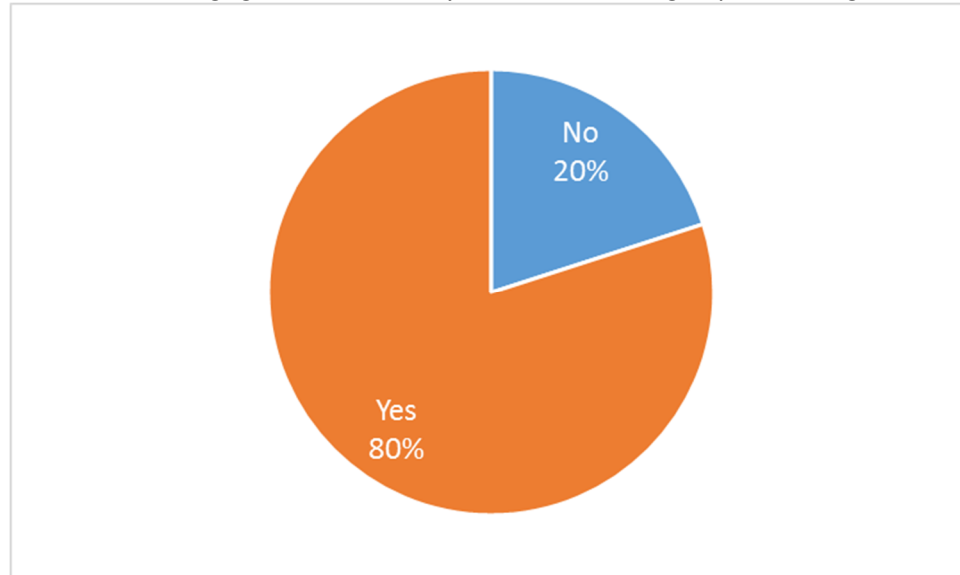
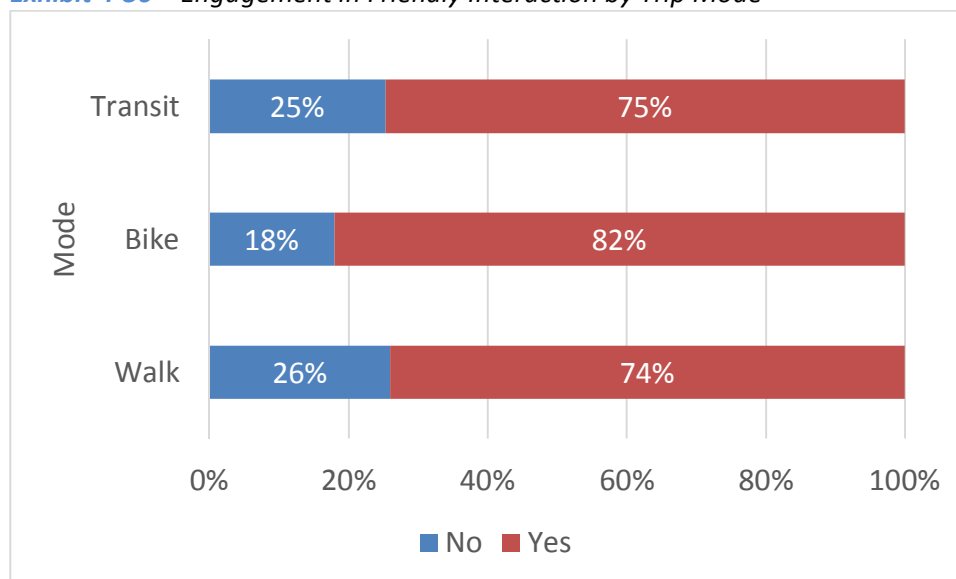
<sup>11</sup> Based on 2009-2013 data from the Canadian Community Health Survey which only includes excellent, very good, fair, and poor health categories.

**Exhibit 4-28** – Self-Reported Health Status of Respondents

## 4.9 Friendly Interaction

In 2014, the survey instrument was expanded to include a question regarding the nature of social interaction during trip making. 80% of participants indicated that they engaged in friendly interaction during their trip as shown in [Exhibit 4-29](#). This is higher than expected; the question may have been misinterpreted to include friendly interaction at the trip destination.

The degree of friendly interaction is cross-referenced against active travel modes in [Exhibit 4-30](#).

**Exhibit 4-29** – Engagement in Friendly Interaction during Trip, Excluding Unknown**Exhibit 4-30** – Engagement in Friendly Interaction by Trip Mode

## 4.10 Origins and Destinations

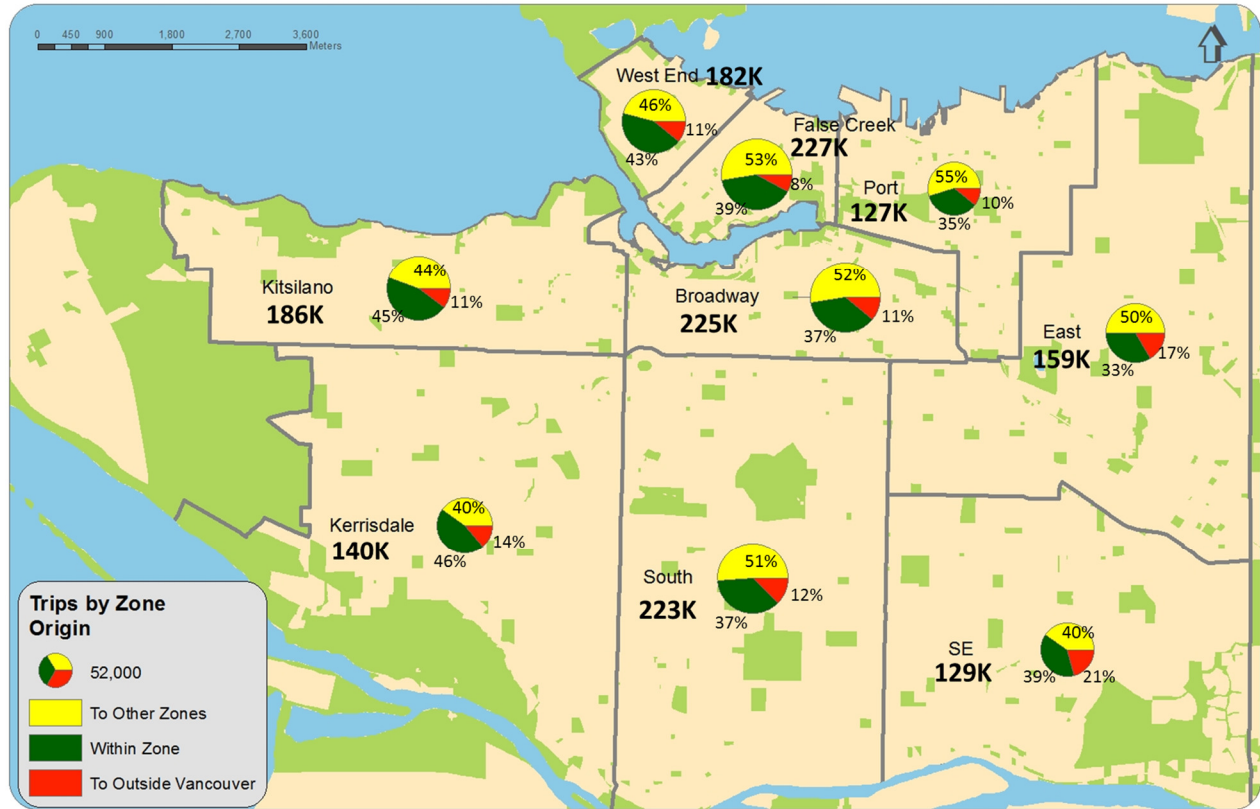
**Exhibit 4-31** captures the origins and destinations (O-D) of the Panel Survey respondents, based on geocoded trip-end coordinates. It should be noted that this survey was undertaken for Vancouver residents only, unlike the Trip diary which is a regional travel survey, thus, any totals for trips from outside Vancouver would not include people who work in Vancouver but live in other areas of the Lower Mainland. Red text indicates a low number of observations in the Panel Survey. This is to be expected given that a limited sample size is being stratified into transportation zones. While the results may not be statistically representative, patterns do emerge:

- The O-Ds are fairly balanced, as evidenced by the symmetry on either side of the diagonal (cells highlighted in pink).
- Travel is predominantly within Vancouver. Most transportation zones only feature 12% of trips to/from outside of the City; only the East and SE zones are higher, but still at 20% or lower (see [Exhibit 4-32](#)).

**Exhibit 4-31 – Origins and Destinations within Transportation Zones and Outside Vancouver**

Origin/Destination	CBD - West End	CBD - False Creek	Downtown (False Creek & West End)	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver SE	Vancouver East	Vancouver Port	Outside Vancouver
CBD - West End	78,200	36,400		9,800	6,800	4,100	9,000	3,500	5,500	8,300	20,100
CBD - False Creek	37,500	89,300		21,100	13,500	6,900	7,500	5,700	12,200	14,700	18,300
Downtown (False Creek & West End)			241,400	30,900	20,200	11,000	16,500	9,200	17,700	22,900	38,400
Vancouver Broadway	10,700	19,000	29,700	82,100	26,700	6,300	23,400	7,200	12,200	10,800	24,800
Vancouver South	8,300	12,500	20,800	26,300	77,700	14,300	13,400	16,500	12,300	5,400	27,600
Vancouver Kerrisdale	3,100	6,800	9,900	8,500	14,200	62,900	16,900	1,600	1,000	1,400	18,400
Vancouver Kitsilano	6,700	9,500	16,200	25,100	14,000	17,000	81,500	1,600	3,300	3,700	19,500
Vancouver SE	3,900	6,700	10,500	8,800	17,700	2,400	800	48,700	9,000	2,100	27,100
Vancouver East	8,300	12,900	21,200	12,400	10,500	900	3,800	10,100	52,000	18,600	26,400
Vancouver Port	10,400	13,400	23,800	9,800	5,100	2,100	3,700	2,300	20,700	44,500	13,300
Outside Vancouver	15,100	20,100	35,200	19,300	28,600	18,200	21,400	29,700	26,900	12,700	134,900

**Exhibit 4-32 – Trips by Origin**







## 5. Comparison of Returning Panel Members

This section provides a high-level comparative analysis of mode shares of 2013 panel members who also participated in the 2014 panel. The 2014 Panel experienced a higher attrition rate (41%) than expected (only 1,495 of 2,517 returned), based on experience from previous longitudinal panels in other jurisdictions. Due to the smaller sample size, the increasing variability in work patterns (flexible work schedules, telecommuting), etc. it is difficult to substantiate trends based on these two years of data.

The following comparisons focus on observed patterns in mode share.

**Exhibit 5-1** shows a comparison of the mode shares of the 2013 and 2014 common panelists. Combined auto driver/passenger mode share has decreased, while travel by walking, cycling and transit has increased. The differences are not large enough to be conclusive at this point. While it is still early to derive conclusive trends from the comparison, it is encouraging to see that overall walk/bike/transit mode share is moving in the positive direction. It will be possible to ascertain this increase in the near future as more panel data are collected especially as the survey instrument and return rate become more stable and consistent over time. It is worth noting that the 2014 Panel results, which included more December and some January 2015 records, may be more affected by seasonality and weather factors. This was evident in overall trip rates, as mentioned in **Section 4.5**.

**Exhibit 5-1 – Change in Mode Share (2013-2014)**

Mode	Returns		Difference
	2013 Panel	2014 Panel	
Auto driver	46.4%	47.1%	0.7%
Auto passenger	7.5%	6.1%	-1.4%
Transit	14.1%	15.2%	1.1%
Walking	26.2%	26.1%	-0.1%
Cycling	5.8%	5.5%	-0.3%

Mode	Returns		Difference
	2013 Panel	2014 Panel	
Auto	53.9%	53.2%	-0.74%
Transit/Walk/Bike	46.1%	46.8%	0.74%

Differences in mode share are also not large enough to determine significance at this point when trip purpose is taken into account. **Exhibit 5-2** and **Exhibit 5-3** compare 2013 and 2014 mode shares for commuting (to work/school) and non-commuting trips, respectively.

**Exhibit 5-2 – Mode Share for Commuting Trips (2013-2014)**

Mode	Returns		Difference
	2013 Panel	2014 Panel	
Auto	43.7%	43.9%	0.20%
Transit/Walk/Bike	56.3%	56.1%	-0.20%

**Exhibit 5-3 – Mode Share for Non-Commuting Trips (2013-2014)**

Mode	Returns		Difference
	2013 Panel	2014 Panel	
Auto	55.6%	54.9%	-0.73%
Transit/Walk/Bike	44.4%	45.1%	0.73%

**Exhibit 5-4** shows growth in vehicular access, both in terms of private vehicles and car share programs. Reasons for the change include wider spread adoption of car sharing as a primary and supplementary form of transportation. In addition, the 2014 Panel included a higher proportion of high income (>\$100k) households.

**Exhibit 5-4 – Access to Motor Vehicles (2013-2014)**

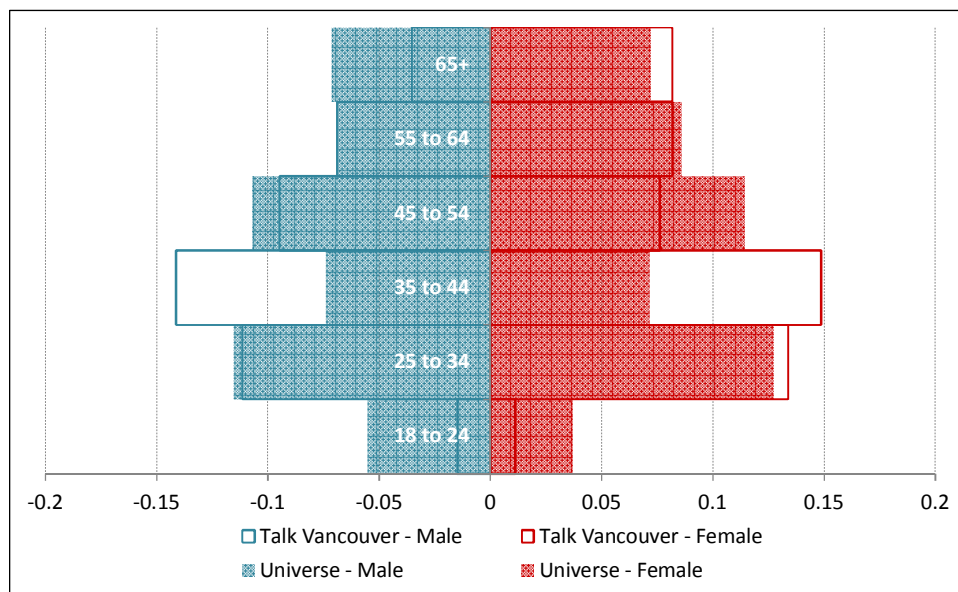
Mode	Returns		Difference
	2013 Panel	2014 Panel	
Private Vehicle Access	76.2%	80.9%	4.6%
Car Share Member	11.9%	16.9%	5.0%
Vehicle Access	80.9%	85.7%	4.8%
Valid License	91.9%	92.2%	0.37%

## 6. Comparison to Talk Vancouver Panel

This section provides a high-level comparative analysis of the 2013 and 2014 Talk Vancouver panel and its trip behaviour to the randomly recruited panel. The Talk Vancouver panel results were not integrated with the randomly recruited panel survey due to a continued non-auto mode bias.

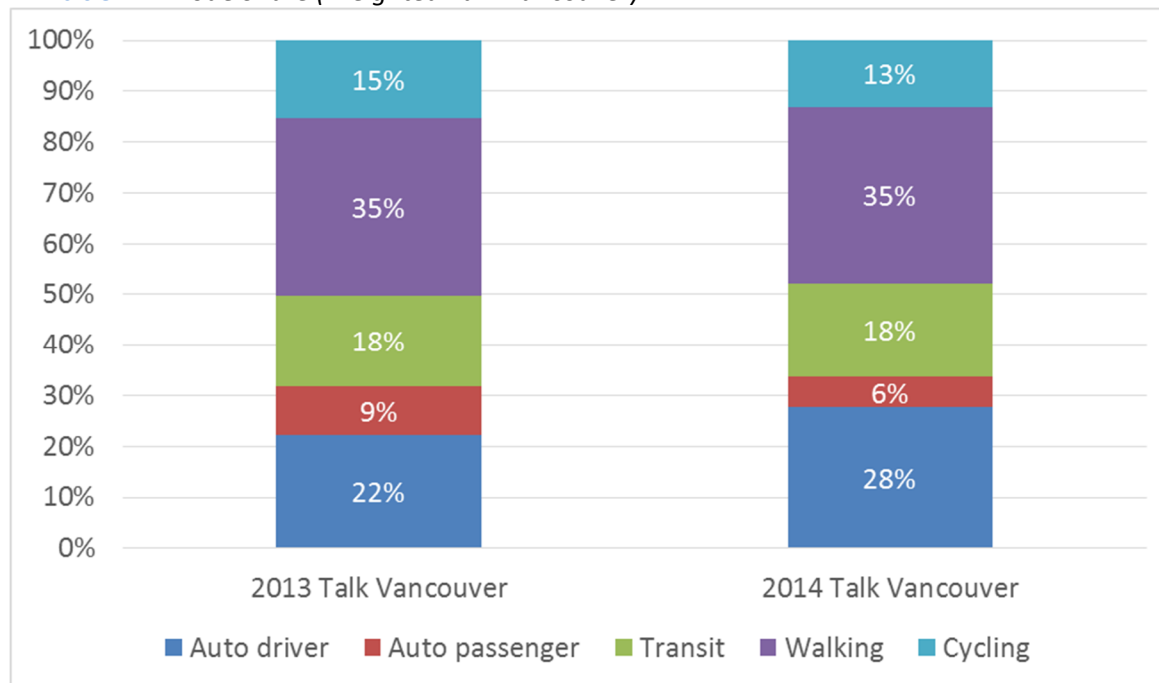
### 6.1 Age and Gender Distribution

The age and gender distribution of the Talk Vancouver panel (unweighted), presented in [Exhibit 2-8 \(b\)](#) and reproduced below, closely matches the Universe distribution for older age groups. Like the randomly recruited panel, the 18-24 age cohort is under represented. The age 35-44 cohort is over represented.



### 6.2 Mode Share

[Exhibit 6-1](#) highlights the mode share characteristics of the Talk Vancouver members. As can be seen, walking and transit mode shares held steady in 2014, but a slightly higher proportion of Talk Vancouver members drove a vehicle. The percentage of travel by walk/ bike/ transit for this survey group is significantly higher than the randomly recruited sample ( 66% vs 50%) which is the primary reason that this survey group was not added to the overall sample group. In future years, the Talk Vancouver panel might be best utilized for attitudinal surveys rather than behavioural surveys given the significant differences in recruitment method and mode bias. Furthermore, through random recruitment, some of the previous Talk Vancouver panelists might be integrated with the panel survey.

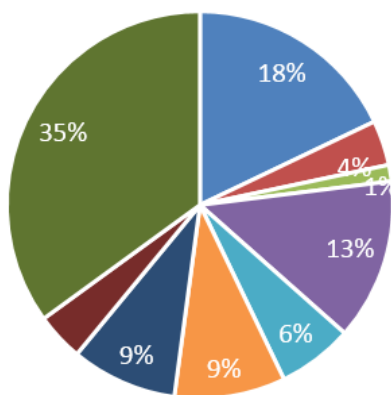
**Exhibit 6-1 – Mode Share (Weighted Talk Vancouver)**

## 6.3 Trip Purpose

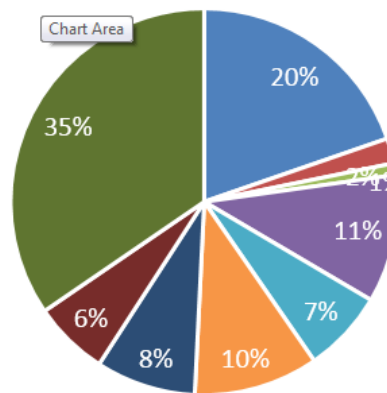
The breakdown of Talk Vancouver trips by trip purpose is shown in [Exhibit 6-2](#). There has not been a significant change in trip purposes.

**Exhibit 6-2 – Talk Vancouver Trip Purpose**

2013 Talk Vancouver Trips Excluding Unknown (%)



2014 Talk Vancouver Trips Excluding Unknown (%)



■ To work

■ To school

■ Dining / Restaurant

■ Personal business

■ To go home

■ During work / business trip

■ Shopping

■ Recreation / Social / Entertainment

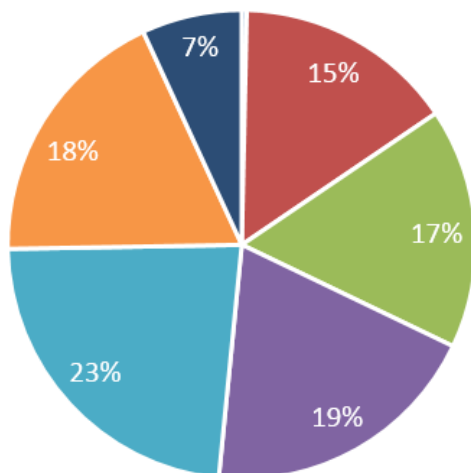
■ To drive someone / drop-off / pick-up

## 6.4 Time of Day

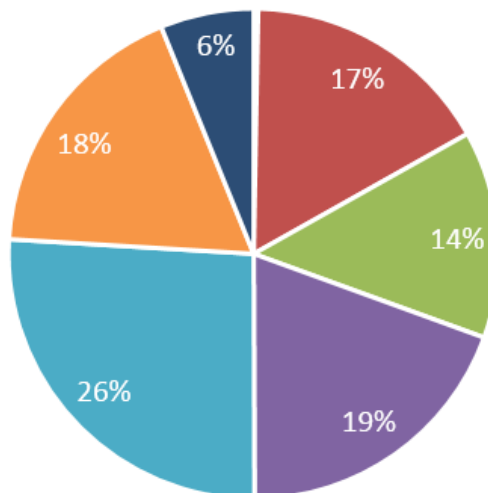
The breakdown of Talk Vancouver trips by time of day is shown in [Exhibit 6-3](#). 2014 Talk Vancouver members made slightly more trips in the PM period and fewer trips during the pre-lunch period.

**Exhibit 6-3 – Talk Vancouver Time of Day**

2013 Talk Vancouver Excluding Unknown (%)



2014 Talk Vancouver Excluding Unknown (%)



- OWL (12:00am to 5:59am)      ■ AM (6:00am to 8:59am)
- PreLunch (9:00am to 11:59am)      ■ MD (12:00pm to 2:59pm)
- PM (3:00pm to 5:59pm)      ■ Evening (6:00pm to 8:59pm)
- Night (9:00pm to 11:59pm)



## 7. Contributing Factors Affecting Change

This section provides a brief discussion of recent (post 2010) trends that have potentially influenced travel behaviour and patterns in Metro-Vancouver in general and the City of Vancouver in particular. These include changes in socio-economic patterns (population and employment), transit supply, transit fares and improvements to the active transportation network. [Exhibit 7-1](#) provides a description of these accounts and their corresponding data sources.

**Exhibit 7-1 – Socio-Economic Accounts Affecting Travel**

Account	Description	Geography	Source
Socio-economic	Population	City of Vancouver	Stats Can
Socio-economic	Employment	Metro-Vancouver	Stats Can
Network Supply	Transit	City of Vancouver	TransLink
Network Supply	Active (Bike Lanes)	City of Vancouver	City of Vancouver
Cost	Transit Fares	Metro-Vancouver	TransLink
Cost	Fuel Price	Metro-Vancouver	Stats Can

TransLink's most recent travel diary (2011) revealed that the region's walk/bike/transit mode share, in general, has increased from 25.5% to 26.8% between 2008 and 2011. This could be attributed to the opening of the Canada Line, significant increases in bus service supply and coverage in the region, improvements to the active transportation network and overall changes in travel behaviour. Also, trip rates have generally gone up slightly over the same period, from 2.68 trips/person to 2.77 trips/person. While not conclusive<sup>12</sup>, the increase in trip rates can be attributed to recovery from the 2008-2009 economic downturn.

The analysis of the 2013 and 2014 City of Vancouver Panel surveys revealed that walk/bike/transit mode share has increased from 47.6% to 49.6% - transit (17.5% to 18.0%), walk (25.6% to 26.2%) and bike (4.4% to 5.4%). Also, the total number of trips decreased from 1.94 million to 1.9 million, trip rates went down from 3.9 trips/person to 3.7 trips/person and the daily VKT based on the Aircare trend is decreasing. Another panel survey year will be required to see if this trend continues. As with the trip diary, it is important to be cautious in drawing conclusive trends of shifting travel behavior using only two years' worth of sample data.

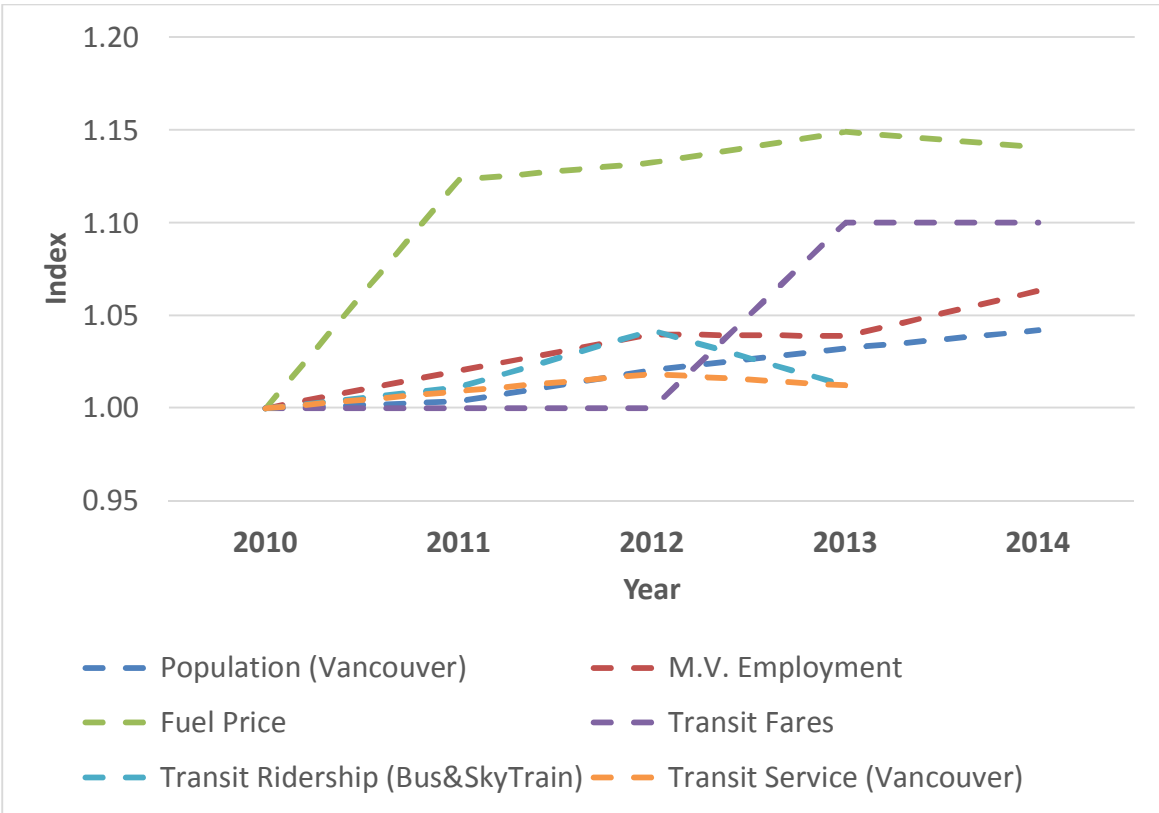
[Exhibit 7-2](#) shows the trends of the accounts described in Table 7-1 and indexed to year 2010. Overall, socio-economic variables, population and employment, have steadily grown in the last four years. Vancouver population grew by approximately 1% from 2013 to 2014. Metro-Vancouver employment slightly decreased between 2012 and 2013 but rebounded strongly by the end of 2014 (+2.4%). Fuel price rose sharply in 2011 and continued to grow at a much slower rate until 2013 after which it decreased by 0.7% in 2014.

On the transportation network accounts, transit service hours in Vancouver increased steadily between 2010 and 2012. Between 2012 and 2013 transit service decreased by approximately 1%. This coincided with an increase of approximately 10% in transit fares (nominal dollars) and the removal of the employer pass, which offered a 15% discount on an annual pass. This can partly explain the reduction in transit ridership over the same period.

<sup>12</sup> The trip diary's sample size is approximately 2% of all of Metro-Vancouver's households. While this provides an adequate sample size, comparisons between travel surveys must always be treated with caution as subtle changes to the survey instrument or sampling biases can influence the results of any comparative analysis.



**Exhibit 7-2 – Socio-Economic Trends Indexed to 2010**



Overall, population and employment have increased between 2013 and 2014. The total number of trips, however, as highlighted earlier, decreased. This is more likely due to subtle differences in the survey instrument in 2014 and the fact that some persons were sampled in December, a time of year when people traditionally make fewer trips.

Interestingly, total auto trips and auto mode share decreased in 2014 even though fuel prices have been trending downwards. While fuel's impact on travel behavior (as well as socio-economic accounts) is latent in nature, the decrease in auto use could be an indicator of changing travel behavior in favour of walk/bike/transit modes.

TransLink's 2014 ridership and performance report has not been released at the time of the completion of the panel survey report, but the ridership trends are expected to be similar to last year. Although it appeared that the transit mode share increased, when looking at the total number of trips it has actually stayed relatively constant. However, it was not possible to confirm the panel survey numbers with actual transit service hours/ridership trends.

It is important to note that both bike trips and bike mode share have increased substantially in 2014. Bike trips increased from 83,300 to 99,100 trips, a 19% increase, and bike mode share increased by 1% (4.4% to 5.4%). This outcome highlights the positive impact that the City's design approach for people of all ages and abilities and related investments towards improving biking facilities has had over the last few years. This trend is similar to what can be seen from permanent count data reported on the City of Vancouver website for nine counters that indicates an increase of 11% in the monthly bike volumes when comparing September, October and November of 2013 to 2014.

## 8. Lessons Learned and Next Steps

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The 2014 Vancouver Panel Survey builds upon the baseline data collected during the 2013 Panel Survey. Having an ongoing panel of residents that are surveyed on an annual basis provides the City with a unique and valuable dataset to track trends in walk/bike/transit mode share and vehicle usage.

Some of the key lessons learned during the 2014 Panel Survey data collection and analysis phases include the following:

- The first year of the panel survey incurred the highest recruitment cost in order to establish the panel. Subsequent panel surveys should see cost savings due to lower recruitment costs. However, this is dependent upon the attrition rate which could be related to survey length, ongoing engagement of the panel members throughout the year, type and value of incentives, and the degree of effort required to capture a higher proportion of underrepresented demographics.
- The high attrition rate could be a result of incentives that may not be so appealing to Vancouver residents. Similar to the regional trip diary survey, a financial incentive in the order of \$10-15 should be considered to maximize participation. If not a cash incentive, then a cash equivalent to a popular retail outlet may prove to be more effective. Some panel members may simply opt in to the survey to get the cash incentive and not report any trips. This has been a small issue with other trip diary surveys in the past but a simple correction for zero trip persons can be made afterwards. Furthermore, quality checks as survey returns are coming in can flag zero trip responses and a call can be made to confirm whether the panelist actually stayed home on their survey day.
- There is significant programming effort to get the online portion of the survey working with changes to questions as some have inter-linkages. In other words, change wording in one question can affect programming for other questions. Again, this should present a cost savings for future surveys as the panel survey questions will likely be similar.
- The Talk Vancouver recruitment effort included a variety of tactics including a media launch, social media posts, outreach to partners, email blasts and a paper insert in property tax mail outs. This differs significantly from the market research which is a randomly recruited survey by telephone. The Talk Vancouver would appear to be more appropriate for attitudinal surveys and a behavioural survey such as the travel survey is different. As such, the results show a suspected non-auto mode bias and corrections for this should be considered for future efforts if the City wants to conduct this survey through Talk Vancouver. Should have this conclusion identified in the talk Vancouver summary section
- This transportation panel survey included a significant amount of effort and technical expertise to do logic and error checking, programming, weighting and expansion. This level of logic and error checking should be maintained for future panel surveys to maintain data consistency and to ensure quality analysis and results.
- The travel patterns reported in the 2013 Panel Survey are remarkably similar to those reported from the 2011 Trip Diary Survey. Furthermore, the 2014 Panel Survey shows consistent trends when comparisons are made with the 2013 survey which shows that these data collection efforts in the future can be a reliable tool for comparing and tracking travel behaviour changes.
- The younger age groups remain a challenging cohort to recruit. Potential smart phone applications such as the “Moves app” could be targeted to younger age groups who might be more willing to try new technologies. The Moves app uses the smart phone built in GPS to track travel throughout the course of a day. Otherwise, more targeting through cell phone lists should be employed in future

recruiting efforts to boost the young age group samples. Next steps in the study include the following:

- Need to develop 2015 panel survey questionnaire considering the third year of implementation - The key difference will be to develop probing questions if panel members have changed their travel patterns from the previous survey, there is also an opportunity to link with the Active Transportation Promotion and enabling plan;
- It would be helpful to ask third year respondents if they were aware of alternative routes and modes of travel as well as potential enhancements the City has developed since the previous year which may have influenced travel choices;
- In light of newer, more detailed questions being incorporated in year three, the overall survey length will need to be managed (possibly removing some existing questions). A lengthy survey becomes counter-productive with increases in attrition and increases in recruitment costs.
- Reach out to panel members in late August/early September to assess rate of panel attrition;
- Assess recruitment effort to replenish for lost panel members, and to better reflect underrepresented sub-groups (in particular 18-24, 25-34 age cohorts);
- Target recruitment start and survey in mid to late September and monitor progress weekly with a goal to ramp up efforts as needed to ensure the entire desired sample is achieved by end of November.

## **Appendix A – 2014 Panel Survey Instrument**

**EMAIL INVITATION – RETURNING PANELISTS COMPLETING ALL SURVEY SECTIONS ONLINE**

**Subject: Trip Day - City of Vancouver Annual Travel Survey**

**Sender: Mustel Group for City of Vancouver [[covtravelsurvey@mustelgroup.com](mailto:covtravelsurvey@mustelgroup.com)]**

Hello and welcome back to the City of Vancouver Annual Travel Survey!

Last year at this time, you completed a travel survey for the City of Vancouver and agreed to be a part of an ongoing panel to help the City in planning and addressing transportation issues for area residents.

As a returning panelist, we again are looking forward to hearing from you on the trips you make and how you travel over a one-day period. And, you will continue to be eligible to enter into a prize draw to win passes to City facilities and attractions!

Note that this year, we would also like you to include trips where you return directly to your start location without stopping off anywhere in between (e.g., you **leave home** for a jog or to walk your dog and then **return home**).

Our video explains this change as well as all other important information you will need to record and enter your trips. [Trip Diary Video LINK](#)

Note that your travel day is next week on (INSERT DAY)

**Here is YOUR UNIQUE LINK:**

<http://www.covtravelsurvey.com/dash/Dash?id=covtravel,34232343>

We also provide you with a **PIN Number**. This is important if you need to contact our Help Line (see below) for any questions or assistance with your survey. Be sure to provide this number when emailing or calling in.

**YOUR PIN NUMBER: 34232343**

If your email program doesn't support *html* and you are unable to click on your unique link above, please copy and paste the link directly into your browser.

Thank you in advance for your continued participation!

Mustel Group Study Team ([covtravelsurvey@mustelgroup.com](mailto:covtravelsurvey@mustelgroup.com))  
402-1505 West 2<sup>nd</sup> Ave,  
Vancouver, BC V5T 1M5

Need Help?

Reply to this email or call us at: **778-383-3416**

(Please have your PIN Number handy when you do.)

To unsubscribe from receiving email reminders, please [click here](#)

To unsubscribe from this survey altogether, please [click here](#)

## **City of Vancouver Annual Travel Survey - Your Dashboard**

### **Before You Start:**

- Watch our video with key points to remember on your travel day (link [Trip Diary Video](#)).
- Your assigned travel day is (INSERT DAY) in the next week.
- We will send you an email reminder the day before.
- Complete step 1 below right away to let us know of any changes from last year.

### **STEP 1. Confirming your Registration Information from the 2013 Survey:**

- Please confirm some key info for us (such as home residence or workplace address, etc.).
- We also have a few new cycling questions and one on health.  
For this step, [click here](#). (WHEN STEP COMPLETE, CHANGE TEXT: Thanks, you have completed this step; go to Step 2 when ready.)

### **STEP 2. Enter Your Trips:**

- When you have completed step 1 above and are ready to enter your travel diary, [click here](#).  
(IF COMPLETE: Thanks, you have completed this step; go to Step 3 when ready.)

### **STEP 3. Last Step after completing travel diary:**

- Verify the make, model and year of your vehicle (if you have a private vehicle).
- Enter the current odometer reading of the vehicle.
- Option to enter the Prize Draw (if eligible).
- Invitation to the City's Parking Survey (relevant for ALL residents including non-drivers).  
For this last step, [click here](#) (IF COMPLETE: Your travel diary is complete. Thank you for participating!)

Here are some other helpful links containing information on the survey and how to complete it.

[Trip Diary Video](#)

[Study FAQs](#)

[Privacy](#)

[Prize Draw/Rules](#)

[Contact Info](#)

[View or Print 'Diary TRIP TRACKER'](#)

Note that these links will open in a new browser tab.

To return to the survey, simply close the tab.

**A. GENDER**

1. MALE      2. FEMALE

**D. EMAIL ADDRESS**

The email address we have on file for you for this Annual Travel Survey is below. If you wish to update to a more frequently used address, or one that is more convenient, please let us know.

Your email address: \_\_\_\_\_

1. Email address is fine
2. I will update my email address

**E. UPDATE EMAIL**

Please enter the email address you prefer to use: \_\_\_\_\_

Please confirm your email address: \_\_\_\_\_

ALERT IF BOTH FIELDS BELOW DO NOT MATCH

**B. Please confirm the home postal code you entered last year. If changed, please update so we are sure you still live in the survey area.**

AUTO\_POPULATE FROM 2013 (6-digit) \_ \_ \_ \_ \_

1. Yes, this is my correct postal code
2. No, I need to update my postal code

**IF DIFFERENT FROM TAGGED COV SUB-AREA, BUT IS ONE OF 8 OTHER VALID SUB-AREAS, ACCEPT.**  
**IF DIFFERENT AND NOT IN ANY COV SUB-AREAS, THANK AND END.**

(6-digit) \_ \_ \_ \_ \_

**EVERYONE- EMPLOYMENT SCREENER:** QAA1. Do you or does anyone in your household work for the City of Vancouver, Mustel Group, CH2M Hill or Vision Critical?

1. Yes → QAA2. Please note that while we can include your responses for this study, due to standard contest rules you will not be eligible for the Prize Draw. Are you still interested in participating?
  - a. Yes → **REMOVE FROM PRIZE DRAW AND CONTINUE**
  - b. No → **THANK AND END INTERVIEW**
2. No **CONTINUE**
3. REF → **THANK AND END INTERVIEW** Those are all the questions we have for you today.  
Thank you for your interest.

AUTO-POPULATE - ASK EITHER C OR C2 DEPENDING ON RESPONSE FROM 2013

**C. Please confirm the year in which you were born? \_\_\_\_\_**

**IF REFUSED YEAR BORN:** C2. Please confirm this is the age group that applies to you.

1. 15-17
2. 18-24
3. 25-34
4. 35-44
5. 45-54
6. 65+
7. PREFER NOT TO ANSWER

## REGISTRATION QUESTIONS

To make the process easier for you to enter your trip information.....

R1. please confirm your first and last name.

FNAME: \_\_\_\_\_ LNAME: \_\_\_\_\_

R2. As the trip diary could include trips you make to or from work and home, please confirm the home address you provided last year?

SUITE#: \_\_\_\_\_ STREET#: \_\_\_\_\_ STREET: \_\_\_\_\_ STREET TYPE: \_\_\_\_\_ STREET DIRECTION: \_\_\_\_\_  
CITY: \_\_\_\_\_ PROVINCE: \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

1. Yes, this information is correct
2. No, I need to update this information

**IF UPDATING INFORMATION (R2=2), OBTAIN NEW ADDRESS AND DISPLAY MAP WITH NEW HOME LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]**

R3. Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

R4. If you are employed, your trip diary may include trips you make to and from work. Please confirm the work address or information you provided last year?

Do not work (unemployed)

No work address (no fixed work address OR only work from home)

**DISPLAY WORK ADDRESS**

STREET#: \_\_\_\_\_ STREET: \_\_\_\_\_ STREET TYPE: \_\_\_\_\_ STREET DIRECTION: \_\_\_\_\_  
CITY: \_\_\_\_\_ PROVINCE: \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

1. Yes, this information is correct
2. No, I need to update this information

**IF UPDATING INFORMATION (R4=2), OBTAIN NEW EMPLOYMENT INFO. IF CHANGE OF WORK ADDRESS, DISPLAY MAP WITH NEW WORK LOCATION IDENTIFIED. [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]**

Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

Do you have more than one work address?

1. No second work address
2. Yes – **ENTER 2<sup>nd</sup> WORK ADDRESS**

STREET#: \_\_\_\_\_ STREET: \_\_\_\_\_ STREET TYPE: \_\_\_\_\_ STREET DIRECTION: \_\_\_\_\_  
CITY: \_\_\_\_\_ PROVINCE: \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

**DISPLAY MAP WITH WORK LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]**

Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**



**PROFILING, GENERAL TRANSPORT & PARKING QUESTIONS**

1. Do you currently have a valid driver's licence?
  1. Yes
  2. No → SKIP TO Q5
  
2. How many vehicles do you own or have regular access to (please include all cars, vans or light trucks that are brought home and parked overnight but not motorcycles / scooters or bicycles; do not include car share vehicles)?
 

\_\_\_\_\_ None
  
3. What car share services are you a part of, if any? (check all that apply)
  1. Car2go\_\_\_\_\_
  2. Modo\_\_\_\_\_
  3. ZipCar\_\_\_\_\_
  4. Other\_\_\_\_\_
  - None\_\_\_\_\_
  
4. Are you a commercial driver, that is do you drive or make deliveries as part of your job (e.g., if a bus or taxi driver, courier, etc.)?
  1. Yes → Note that this survey concerns your travel for personal trips and those including travel to and from your job, but not trips made as part of your commercial driving job.
  2. No
  
5. What is your **usual mode of transportation** this time of year for trips to or from **work and/or school**? If you transfer between modes, specify the combination you usually take. (e.g. Bus and SkyTrain **OR** Auto passenger dropped off at SkyTrain, etc.) **MULTIPLE RESPONSE ACCEPTED**
  - a. Car, truck, or van as a driver
  - b. Car, truck, or van as a passenger
  - c. Transit bus
  - d. SkyTrain
  - e. West Coast Express
  - f. SeaBus
  - g. HandyDART
  - h. School bus
  - i. Other bus
  - j. Bicycle
  - k. Walk
  - l. Taxi
  - m. Motorcycle
  - n. Other (specify) \_\_\_\_\_
  - o. DO NOT TRAVEL TO WORK/SCHOOL
  
6. In terms of walking, what would you consider a reasonable walking distance for travel purposes (work, school, shopping, etc.) (RECORD FARTHEST DISTANCE): <400m (6 min), 400-800m (6-12 min), 800-1,200m (12-18 min), >1,200m (>18 min).
  
7. Regarding bicycling, would you say that.....
  1. you want to travel by bike more than you do now
  2. you are happy with how much you currently bike, or
  3. you have no interest in bicycling → **SKIP TO Q11**

- 
8. Which of the following best describes you?
1. I am a fair weather bicyclist, most often I do not bicycle in rainy or cold weather conditions
  2. I am a year round bicyclist, I bicycle year round regardless of rain or cold
9. And how often do you typically travel on bicycle. Would it be.....
- a. At least twice per week
  - b. Once per week to once per month
  - c. Less than once per month
10. In which of the following environments would you feel comfortable bicycling on your own. Please check as many as apply:
1. On almost any street in the city and I don't worry much about traffic conditions.
  2. On major streets, provided they have comfortable and convenient painted bike lanes and intersections.
  3. On major streets, provided they have comfortable and convenient bike lanes separated from traffic with a physical barrier.
  4. On local neighbourhood streets with little traffic and low speeds.
  5. On bicycle paths far away from motor vehicles.
11. Have you traveled by public transit in the past month?
1. YES → **ASK 12**
  2. NO
12. IF YES: How do you usually pay for your travel by transit this time of year? (RECORD ALL THAT APPLY)
1. Cash
  2. FareSaver (tickets)
  3. Monthly FareCard
  4. U-Pass
  5. Employer Pass (Discount or fully paid for by employer)
  6. Annual Pass
  7. Other Specify: \_\_\_\_\_

## DEMOGRAPHICS

Just a few questions to help us classify the survey data.

1. Including you, how many people reside in your household?

DROP DOWN MENU

2. The City is interested in tracking the health of its residents. In general, would you say that your health is...

- a. Excellent
- b. Very good
- c. Good
- d. Fair
- e. Poor

3. What type of dwelling do you currently live in?

- a. A single detached home (includes basement suites)
- b. An apartment or condo in a low rise (5 levels or less)
- c. An apartment or condo in a high rise (more than 5 levels)
- d. A townhouse/row house
- e. Semi-detached home or a duplex (includes basement suites)
- f. Residential care or long term care facility
- g. A mobile home

4. EMPLOYMENT: Are you:

- a. Working full-time (30+ hours per week)
- b. Working part-time (less than 30 hours per week)
- c. Self-employed
- d. Volunteer only (not for pay)
- e. Unemployed
- f. Looking after home/family
- g. Retired
- h. Student full-time
- i. Student part-time

5. HOUSEHOLD INCOME: Which of the following best describes your total **household** income (the combined gross income for all household members)?

- a. Less than \$25,000
- b. \$25,000 to less than \$50,000
- c. \$50,000 to less than \$75,000
- d. \$75,000 to less than \$100,000
- e. \$100,000 to less than \$150,000
- f. \$150,000 or more

6. What is the highest level of education you have completed?
- Have not completed high school
  - Completed high school/secondary school
  - Trade certificate or diploma from a vocational school or apprenticeship training
  - Non-university certificate or diploma from a community college, CEGEP or nursing school
  - University certificate below bachelor's level
  - Bachelor's degree
  - Graduate degree (master's degree or doctorate)
7. **ETHNICITY:** Were you born in Canada?
- Yes
  - No
8. Vancouver residents come from many different backgrounds. What is your main ethnic background?  
[ALLOW UP TO TWO OPTIONS TO BE SELECTED]
01. African
  02. American
  03. Other Asia (Indonesian, Malaysia, Thailand)
  04. Australia
  05. British (English/Scottish/Welsh/Irish)
  06. Canadian (including First Nations, Inuit, Metis)
  07. Chinese
  08. Dutch
  09. East Indian (Punjabi, India, Tamil, Guyana, Pakistani, etc)
  10. East European (Ukrainian, Polish, Hungarian, Serb, etc)
  11. Filipino
  12. French
  13. German
  14. Greek
  15. Italian
  16. Japanese
  17. Korean
  18. Latin American (Guatemalan, Nicaraguan, Mexican, etc)
  19. Middle Eastern
  20. Portuguese
  21. South American (Brazilian, Peruvian, Columbian, Chilean, Ecuadorian)
  22. Scandinavian
  23. Spanish
  24. Vietnamese
- OTHER SPECIFY: \_\_\_\_\_

### TRIP BEHAVIOUR (Monday to Friday only)

The City needs to understand residents' transportation choices each time they make a trip within or through the Lower Mainland. Please watch this quick video on how to fill in the trip diary: [Link to Trip Diary Video](#)

In this survey, we are asking about all of your trips taken on [INSERT ASSIGNED DAY] between midnight and 11:59 p.m. (a full 24 hour day).

**PROGRAMMER NOTE: INSERT THIS TEXT IF DRIVES OR MAKES DELIVERIES AS PART OF JOB (PROFILING AND GENERAL TRANSPORT QUESTION 3 = YES):**

Please remember to exclude trips you make as part of your job (i.e. driving a bus, taxi or commercial vehicle), but do include trips to and from work as well as any other personal trips you make.

**DEFINITION OF A TRIP (ON FIRST SCREEN – HAVE AS LINK OR DROP DOWN ON EVERY OTHER TRIP SCREEN)**

**A trip is travel from one location to another location for a purpose.**

- **Include trips made by all means (walking, cycling, transit, car, etc)**
- **Include short trips** (e.g., stopping at a coffee shop, a gas station or dropping someone off)
- **Include return trips** (e.g., going home)
- **Include recreational outings that end at the same place they started** (e.g., dog walking, going for a walk or jogging)

1. Did you make any trips that started and ended on [INSERT ASSIGNED DAY], between midnight and 11:59 p.m (a full 24 hour day)?

1. No, stayed home or was out of town for the whole day → SKIP TO VKT SECTION
2. Yes

## 1. Trip 1

- a) What was the **starting location**? If this trip started from home or work, please click “Home” or “Work”. Otherwise please enter ONE of the following for your start location:

- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

- b) What was your **end location**? If this trip ended at home or work, please click “Home” or “Work”. If this is a recreational trip where your start and end locations are the same, please select that response. (Examples of recreational trips are dog walking, jogging, etc)

Otherwise please enter ONE of the following: for your end location

- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

☐ Same as origin (a recreational trip such as walking, dog walking or jogging where you start and end your trip at the same location)

Address: \_\_\_\_\_

Nearby cross-streets: \_\_\_\_\_ and \_\_\_\_\_

Landmark: \_\_\_\_\_

Municipality:

1. Vancouver
2. Burnaby
3. Coquitlam
4. Delta/Ladner/Tsawwassen
5. Langley/Langley Township/Fort Langley/Aldergrove
6. Maple Ridge
7. New Westminster
8. North Vancouver
9. Pitt Meadows
10. Port Coquitlam
11. Port Moody/Anmore/Belcarra
12. Richmond
13. Surrey
14. West Vancouver (including Horseshoe Bay/Lions Bay)
15. White Rock
16. All Other Locations Ending Outside of Metro Vancouver

(NEW SCREEN: GOOGLE MAP WITH PIN POINT OF LOCATION. Confirm: Is this the correct location? IF YES: **INSERTION OF LAT-LONG FROM GEO-CODER**. IF NO, RETURN TO END LOCATION SCREEN FOR RE-ENTRY/REVISION OF LOCATION DETAIL)

- c) What time of day did you start this trip?
1. 12:00am to 5:59am
  2. 6:00am to 8:59am
  3. 9:00am to 11:59am
  4. 12:00pm to 2:59pm
  5. 3:00pm to 5:59pm
  6. 6:00pm to 8:59pm
  7. 9:00pm to 11:59pm
- d) IF RESPONSE "Same as origin" IN b) ask: Approximately how long was this recreational trip?
1. Less than 10 minutes
  2. 10 to less than 20
  3. 20 to less than 30
  4. 30 to less than 40
  5. 40 to less than 50
  6. 50 to less than 60 minutes
  7. 60 minutes or more
- e) What was the main **purpose** of this trip? ONE RESPONSE ONLY AUTO CODE AS "Recreation" IF RESPONSE "Same as origin" IN b)
1. To work
  2. During work/business trip
  3. To school
  4. Shopping
  5. Dining/restaurant
  6. Recreation (including dog walking, jogging, etc)/social/entertainment
  7. Personal business (e.g. bank, doctor, etc)
  8. To drive someone/drop-off/pick-up
  9. To go home
- f) How did you travel to this location? Choose all that apply. If more than one, list in order of use. If you walked and used other modes, select "walked as part of the trip" as well as the other modes.
1. Private car, truck, or van as a driver
  2. Private car, truck, or van as a passenger
  3. CAR SHARE as a driver (ex Modo, Car2go, ZipCar, etc)
  4. CAR SHARE as a passenger (ex Modo, Car2go, ZipCar, etc)
  5. Transit bus
  6. SkyTrain (Expo, Canada and Millennium Lines)
  7. West Coast Express
  8. SeaBus
  9. HandyDART
  10. School bus
  11. Other bus
  12. Walked/jogged the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
  13. Walked/jogged as part of the trip
  14. Bicycle
  15. Taxi
  16. Other (specify) \_\_\_\_\_

AUTO CODE AS "No", IF RESPONSE "Same as origin" IN b)

g) Was this trip a stop along the way to your next location? (e.g. a short trip such as a drop off, gas station, coffee shop, etc.)

1. Yes → Did you pre-plan to make this stop? 1. Yes 2. No  
2. No

h) Aside from any travelling companion(s) that may have been with you on this trip, did you engage in friendly interaction with anyone (e.g. with a neighbour, vendor, friend, transit rider, transit driver, or stranger)?

1. Yes 2. No

**TRIP SUMMARY:** Please review the information you have provided for this trip.

INSERT

START LOCATION  
END LOCATION  
TIME OF DAY  
MAIN PURPOSE OF TRIP  
METHODS OF TRAVEL

Is this information complete?

1. Yes  
2. No (RETURNS TO REVIEW AND EDIT THE TRIP)

Do you have any other details or comments about **this trip** that you would like to provide? If you have no additional comments, click NEXT to continue.

**COMMENT BOX PROVIDED**

h) Did you make another trip on this day before 11:59pm? (Remember to include return trips.)

1. Yes  
2. No (last trip of the day) → IF LAST RIP DID NOT RETURN HOME, ASK i)

i) Did you return home before 11:59pm on this travel day?

1. Yes - Please record the details of this trip  
2. No - Did not return home on this day → **SKIP TO SECTION 2**

**Trips 2-15: REPEAT TRIP QUESTIONS STARTING WITH....**

b) **Destination:** Where did you go next? ALL OTHER QUESTIONS SAME AS ABOVE

**AFTER LAST TRIP OF DAY, TOTAL TRIP SUMMARY:** Please review your trips below.

j) Are your trips complete?

INSERT TRIP SUMMARIES

TRIP	FROM	TO	PURPOSE
1	ADDRESS	ADDRESS	PURPOSE
2	ADDRESS	ADDRESS	PURPOSE
3, etc	ADDRESS	ADDRESS	PURPOSE

1. Yes  
2. No (**RETURNS TO REVIEW AND EDIT THE TRIP**)



## VKT SECTION

### PROGRAMMER NOTE: IF PRIVATE VEHICLE CHOSEN IN RECRUIT PROFILING AND GENERAL TRANSPORT SECTION (Q2), ASK Q1-2

Below is the make, model and year of the private vehicle you provided to us in the 2013 survey (the one you typically used for your personal trips). If this has changed please let us know.

INSERT: **MAKE** **MODEL** **YEAR**

1. Yes, this is the private vehicle I typically use for my personal trips
2. No, the private vehicle I typically use for my personal trips has changed → **ASK Q1**

1. What type of private vehicle do you typically drive?

### INSERT IF COMMERCIAL DRIVER IDENTIFIED IN RECRUIT PROFILING & GENERAL TRANSPORT SECTION (Q3)

This is the vehicle typically driven for your personal trips. If you typically use a commercial vehicle for your personal trips, select that vehicle from the list below.

**DROP DOWN MENUS AS PER NRCAN DATASET -AS NRCAN LIST ONLY INCLUDES PASSENGER VEHICLES, ALLOW OVERRIDE** **MAKE** **MODEL** **YEAR**

2. It is important for the City to understand how many kilometers residents are driving in a year. Please record the current odometer reading for this vehicle (to nearest 100km's). If unsure, you may check the vehicle and return to enter later. \_\_\_\_\_ km's

IF EMPLOYMENT SCREENER = STUDY EMPLOYEE, GO DIRECTLY TO PARKING SURVEY OPT-IN

## PRIZE DRAW, PARKING SURVEY OPT-IN & CLOSING SCREEN

In appreciation of your participation, we will enter you into a draw to win passes to City facilities and attractions such as:

- a 3 month Flexipass – providing unlimited admission to any Park Board pool, fitness centre, or rink in the City during the validity period (Value \$121)
  - or
  - a 1-year Premium Membership to the VanDusen Botanical Gardens, providing the member and a guest free entrance year round (Value \$112)
  - or
  - PNE Playland PlayPasses – 2 one-day admission passes providing access to over 30 rides and attractions (Value \$43.50).
- In all, approximately a 1-in-15 chance to win.

1. Yes, please enter me into the draw
2. No, thank you

Note that prize draw winners will be contacted once the study is complete.

### PARKING SURVEY OPT IN:

1. Before submitting your survey, the City is recruiting residents to participate in a one-time, brief survey about parking – likely in early 2015. We'd like your feedback, regardless of what modes of transportation you use or whether you own a vehicle. In appreciation of your participation, the parking survey would also have similar prize draws. Please indicate your interest by clicking the appropriate response below:
  1. Yes, I will participate
  2. No thanks

**CLOSING:** This completes our survey. Thank you very much for your input and interest in this annual trip diary survey! We'll be in touch next year at this time!

## OTHER PAGES IN SURVEY

### EXIT CLICKED IN SURVEY

Are you sure you want to leave the survey now? If you arrived here by mistake and wish to continue the survey now, click "Previous" to return.

For questions or technical help, please email Mustel Group: [covtravelsurvey@mustelgroup.com](mailto:covtravelsurvey@mustelgroup.com)

If you would like to leave the survey now, how would you like to re-access your survey?

- ☐ Please send me an email with my unique link
- ☐ I will re-access from the original email invitation I received

### ONCE EXITED

Thank you for your participation so far!

Please complete the survey and diary in the next week. Note that we are interested in all types of travel even if one of your assigned days is not typical for you.

You may now close this window.

### EMAIL SENT

**Subject: RE: Trip Day - City of Vancouver Annual Travel Survey**

**Sender: Mustel Group for City of Vancouver [[covtravelsurvey@mustelgroup.com](mailto:covtravelsurvey@mustelgroup.com)]**

Hello City of Vancouver Travel Survey Panelist.

Here is your unique link to re-access the survey when you are ready:  
<http://www.covtravelsurvey.com/dash/Dash?id=covtravel,34232343>

Thank you for your participation so far and we look forward to your completed survey!

Mustel Group Study Team ([covtravelsurvey@mustelgroup.com](mailto:covtravelsurvey@mustelgroup.com))  
402-1505 West 2<sup>nd</sup> Ave,  
Vancouver, BC V5T 1M5

Need Help?

Reply to this email or call us at: **778-383-3416**

Please have your PIN Number handy when you do.

**PIN NUMBER: 34232343**

To unsubscribe from receiving email reminders, please [click here](#)

To unsubscribe from this survey altogether, please [click here](#)

**RECRUITMENT SCREENER – NEW TEL RECRUITS**

**Random sample & Cell sample : City of Vancouver households to boost specific sub-areas.**

Hello, I'm calling on behalf of the City of Vancouver regarding an important research study. I'm \_\_\_ of Mustel Group, a professional polling firm. We have been commissioned by the City to recruit a panel of residents to participate in an online transportation study. (ONLY IF ASKED: Today's survey will take approximately 10 minutes). Your household has been randomly selected for this panel and your input will help the City make better decisions regarding future transportation investments for area residents. We would simply email you an invitation to the study.

QS1. Do you have access to email?

1. Yes
2. No → THANK AND END

IF REQUIRED: The travel survey is easy – it is simply a log or diary of the trips you make on a single assigned day. You will be making an important contribution and in appreciation of your participation, you would be entered into a prize draw to win passes to City facilities and attractions.

A. To randomize our interviews, may I please speak to the male/female in your household who is 15 years of age or older?

1. MALE
2. FEMALE

B. To ensure our sample covers all areas of the City of Vancouver, may I please have your home postal code?

**IF DIFFERENT FROM TAGGED COV SUB-AREA, BUT IS ONE OF 8 OTHER VALID SUB-AREAS, ACCEPT.**

**IF DIFFERENT AND NOT IN ANY COV SUB-AREAS, THANK AND END.**

(6-digit) \_ \_ \_ \_ \_

**EVERYONE- EMPLOYMENT SCREENER:** QAA1. First, do you or does anyone in your household work for the City of Vancouver, Mustel Group, CH2M Hill or Vision Critical?

1. Yes → QAA2. Please note that while we can include your responses for this study, due to standard contest rules you will not be eligible for the Prize Draw. Are you still interested in participating?

a. Yes → **REMOVE FROM PRIZE DRAW AND CONTINUE**

b. No → **THANK AND END INTERVIEW**

2. No

3. REF → **THANK AND END INTERVIEW** Those are all the questions we have for you today.

Thank you for your interest.

C. And so we can be sure the sample represents all ages of residents can you please tell me the year in which you were born? \_\_\_\_ **IF REFUSED YEAR BORN:** C2. So that the study is reflective of all resident age groups, I can read you a short list and you can let me know which one applies to you.

1. 15-17
2. 18-24
3. 25-34
4. 35-44
5. 45-54
6. 65+
7. PREFER NOT TO ANSWER

#### PERSUADERS—only if needed:

- This is strictly a transportation survey; we are not selling or soliciting anything.
- Your number was selected at random for participation in this research.
- This study is important as it will help the City better understand travel patterns, transportation needs and to help make better decisions regarding transportation investments for area residents.
- City of Vancouver Contact only if requested: Phone 311

#### INVITATION TO PARTICIPATE

As mentioned, we are conducting this transportation study on behalf of the City of Vancouver and you have been randomly selected to participate annually in a short survey over the next few years. The travel survey is easy – it is simply a log or diary of the trips you make on a single assigned day. You will be making an important contribution and in appreciation of your participation, you would be entered into a prize draw to win passes to City facilities and attractions such as:

a 3 month City of Vancouver Flexipass – providing unlimited admission to any Park Board pool, fitness centre, or rink in the City during the validity period (Value \$121)

or

a 1-year Premium Membership to the VanDusen Botanical Gardens, providing the member and a guest free entrance year round (Value \$112)

or

PNE Playland PlayPasses – 2 one-day admission passes providing access to over 30 rides and attractions (Value \$43.50).

Chances of winning are approximately 1-in-15!

D. ASK ALL i) Are you interested in being part of this travel survey?

#### IF YES, CONTINUE WITH ii) PRIVACY.

ii) PRIVACY: As one of the goals of this study is to understand and track changes in residents' travel patterns over time, your contact information linked with your survey responses would be retained by the City **for this study only**. Note that all information would remain confidential in a secure environment and would not be used on an individual basis for any other purposes.

Do you agree to share your personal contact and linked survey responses with the City of Vancouver for the sole purpose of participating in this travel survey?

Yes → EMAIL CAPTURE

No → THANK AND END. Those are all the questions for today. Thank you.

E. **EMAIL CAPTURE:** May I please have your name and email address so we can send you the survey link?

**READ IF NECESSARY:** Be assured that your email address will not be shared with any marketing companies and you will not receive any SPAM emails.

i. First name: \_\_\_\_\_ Last name: \_\_\_\_\_

ii. email address: \_\_\_\_\_

iii. CONFIRM BY RE-ENTERING AND REPEATING UNTIL CORRECT: email: \_\_\_\_\_

#### SEND EMAIL INVITATION – SEE INVITE ON PAGE 8

Your email invitation has been sent and you should receive it shortly.

Please look for an email from [covtravelsurvey@mustelgroup.com](mailto:covtravelsurvey@mustelgroup.com)

with the following subject line: City of Vancouver Annual Travel Survey.

If convenient, please check your INBOX now to make sure you have it.

**IF NOT RECEIVED:** Maybe check your SPAM or JUNK mail folder.

**IF STILL NOT RECEIVED, RETURN AND VERIFY EMAIL ADDRESS**

**IF CHECK LATER:** If you do not receive the email, please call us at this number: 778-383-3416

## REGISTRATION QUESTIONS

Thank you for agreeing to participate!

To make the process easier for you to enter your trip information, we have a few additional questions.

R1. What is your first and last name? If you prefer to provide initials, that works.

FNAME: \_\_\_\_\_ LNAME: \_\_\_\_\_

R2. As the trip diary could include trips you make to or from work and home, may I have your home address?

SUITE#: \_\_\_\_\_ STREET#: \_\_\_\_\_ STREET: \_\_\_\_\_ STREET TYPE: \_\_\_\_\_ STREET DIRECTION: \_\_\_\_\_  
CITY: \_\_\_\_\_ PROVINCE: \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

## DISPLAY MAP WITH HOME LOCATION IDENTIFIED

R3. Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

R4. If you are employed, your trip diary may include trips you make to and from work, may I have your work address?

1. Do not work (unemployed)
2. No work address (no fixed work address OR only work from home)
3. Yes – **ENTER WORK ADDRESS**

STREET#: \_\_\_\_\_ STREET: \_\_\_\_\_ STREET TYPE: \_\_\_\_\_ STREET DIRECTION: \_\_\_\_\_  
CITY: \_\_\_\_\_ PROVINCE: \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

## DISPLAY MAP WITH WORK LOCATION IDENTIFIED

Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

Do you have more than one work address?

1. No second work address
2. Yes – **ENTER 2<sup>nd</sup> WORK ADDRESS**

STREET#: \_\_\_\_\_ STREET: \_\_\_\_\_ STREET TYPE: \_\_\_\_\_ STREET DIRECTION: \_\_\_\_\_  
CITY: \_\_\_\_\_ PROVINCE: \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

## DISPLAY MAP WITH WORK LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

Is this the correct location?

3. Yes
4. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

**PROFILING, GENERAL TRANSPORT & PARKING QUESTIONS**

1. Do you currently have a valid driver's licence?
  1. Yes
  2. No → SKIP TO Q5
  
2. How many vehicles do you own or have regular access to (please include all cars, vans or light trucks that are brought home and parked overnight but not motorcycles / scooters or bicycles; do not include car share vehicles)?
 

\_\_\_\_\_ None
  
3. What car share services are you a part of, if any? (check all that apply)
  1. Car2go\_\_\_\_\_
  2. Modo\_\_\_\_\_
  3. ZipCar\_\_\_\_\_
  4. Other\_\_\_\_\_
  - None\_\_\_\_\_
  
4. Are you a commercial driver, that is do you drive or make deliveries as part of your job (e.g., if a bus or taxi driver, courier, etc.)?
  1. Yes → Note that this survey concerns your travel for personal trips and those including travel to and from your job, but not trips made as part of your commercial driving job.
  2. No
  
5. What is your **usual mode of transportation** this time of year for trips to or from **work and/or school**? If you transfer between modes, specify the combination you usually take. (e.g. Bus and SkyTrain **OR** Auto passenger dropped off at SkyTrain, etc.) **MULTIPLE RESPONSE ACCEPTED**
  - a. Car, truck, or van as a driver
  - b. Car, truck, or van as a passenger
  - c. Transit bus
  - d. SkyTrain
  - e. West Coast Express
  - f. SeaBus
  - g. HandyDART
  - h. School bus
  - i. Other bus
  - j. Bicycle
  - k. Walk
  - l. Taxi
  - m. Motorcycle
  - n. Other (specify) \_\_\_\_\_
  - o. DO NOT TRAVEL TO WORK/SCHOOL
  
6. In terms of walking, what would you consider a reasonable walking distance for travel purposes (work, school, shopping, etc.) (RECORD FARTHEST DISTANCE): <400m (6 min), 400-800m (6-12 min), 800-1,200m (12-18 min), >1,200m (>18 min).
  
7. Regarding bicycling, would you say that.....
  1. you want to travel by bike more than you do now
  2. you are happy with how much you currently bike, or
  3. you have no interest in bicycling → **SKIP TO Q11**

8. Which of the following best describes you?
1. I am a fair weather bicyclist, most often I do not bicycle in rainy or cold weather conditions
  2. I am a year round bicyclist, I bicycle year round regardless of rain or cold
9. And how often do you typically travel on bicycle. Would it be.....
- a. At least twice per week
  - b. Once per week to once per month
  - c. Less than once per month
10. In which of the following environments would you feel comfortable bicycling on your own:
1. On almost any street in the city and I don't worry much about traffic conditions.
  2. On major streets, provided they have comfortable and convenient painted bike lanes and intersections.
  3. On major streets, provided they have comfortable and convenient bike lanes separated from traffic with a physical barrier.
  4. On local neighbourhood streets with little traffic and low speeds.
  5. On bicycle paths far away from motor vehicles.
11. Have you traveled by public transit in the past month?
1. YES → **ASK 12**
  2. NO
12. IF YES: How do you usually pay for your travel by transit this time of year? (RECORD ALL THAT APPLY)
1. Cash
  2. FareSaver (tickets)
  3. Monthly FareCard
  4. U-Pass
  5. Employer Pass (Discount or fully paid for by employer)
  6. Annual Pass
  7. Other Specify: \_\_\_\_\_

## DEMOGRAPHICS

Just a few questions to help us classify the survey data.

1. Including you, how many people reside in your household?  
DROP DOWN MENU

2. In general, would you say that your health is...
- a. Excellent
  - b. Very good
  - c. Good
  - d. Fair
  - e. Poor

**READ IF NECESSARY:** The City is simply interested in tracking the health of its residents for research purposes.

3. What type of dwelling do you currently live in?
- a. A single detached home (includes basement suites)
  - b. An apartment or condo in a low rise (5 levels or less)
  - c. An apartment or condo in a high rise (more than 5 levels)
  - d. A townhouse/row house
  - e. Semi-detached home or a duplex (includes basement suites)
  - f. Residential care or long term care facility
  - g. A mobile home

4. **EMPLOYMENT:** Are you:
- a. Working full-time (30+ hours per week)
  - b. Working part-time (less than 30 hours per week)
  - c. Self-employed
  - d. Volunteer only (not for pay)
  - e. Unemployed
  - f. Looking after home/family
  - g. Retired
  - h. Student full-time
  - i. Student part-time

5. **HOUSEHOLD INCOME:** Which of the following best describes your total **household** income (the combined gross income for all household members)?
- a. Less than \$25,000
  - b. \$25,000 to less than \$50,000
  - c. \$50,000 to less than \$75,000
  - d. \$75,000 to less than \$100,000
  - e. \$100,000 to less than \$150,000
  - f. \$150,000 or more



6. What is the highest level of education you have completed?
- Have not completed high school
  - Completed high school/secondary school
  - Trade certificate or diploma from a vocational school or apprenticeship training
  - Non-university certificate or diploma from a community college, CEGEP or nursing school
  - University certificate below bachelor's level
  - Bachelor's degree
  - Graduate degree (master's degree or doctorate)
7. **ETHNICITY:** Were you born in Canada?
- Yes
  - No
8. Vancouver residents come from many different backgrounds. What is your main ethnic background?  
[ALLOW UP TO TWO OPTIONS TO BE SELECTED]
01. African
  02. American
  03. Other Asia (Indonesian, Malaysia, Thailand)
  04. Australia
  05. British (English/Scottish/Welsh/Irish)
  06. Canadian (including First Nations, Inuit, Metis)
  07. Chinese
  08. Dutch
  09. East Indian (Punjabi, India, Tamil, Guyana, Pakistani, etc)
  10. East European (Ukrainian, Polish, Hungarian, Serb, etc)
  11. Filipino
  12. French
  13. German
  14. Greek
  15. Italian
  16. Japanese
  17. Korean
  18. Latin American (Guatemalan, Nicaraguan, Mexican, etc)
  19. Middle Eastern
  20. Portuguese
  21. South American (Brazilian, Peruvian, Columbian, Chilean, Ecuadorian)
  22. Scandinavian
  23. Spanish
  24. Vietnamese
- OTHER SPECIFY: \_\_\_\_\_

## EMAIL INVITATION

### Welcome to the City of Vancouver Annual Travel Survey!

Your unique link to the trip diary survey is below.

Note that **(INSERT DAY)** next week is your assigned travel day. Please keep track of your trips on this day and then access the survey to complete the online diary.

When you access the survey you will first be able to review helpful information on how to complete it.

### Here is YOUR UNIQUE LINK:

<http://www.covtravelsurvey.com/dash/Dash?id=covtravel,34232343>

We also provide you with a **PIN Number**. This is important if you need to contact our Help Line (see below) for any questions or assistance with your survey. Be sure to provide this number when emailing or calling in.

**YOUR PIN NUMBER: 34232343**

If your email program doesn't support *html* and you are unable to click on the link above, please copy and paste the link directly into your browser.

Thank you in advance for your participation!

Mustel Group Study Team ([covtravelsurvey@mustelgroup.com](mailto:covtravelsurvey@mustelgroup.com))  
402-1505 West 2<sup>nd</sup> Ave,  
Vancouver, BC V5T 1M5

Need Help?

Reply to this email or call us at: **778-383-3416**  
(Please have your PIN Number handy when you do.)

To unsubscribe from receiving email reminders, please [click here](#)

To unsubscribe from this survey altogether, please [click here](#)

## **City of Vancouver Annual Travel Survey - Your Dashboard (COMPLETED BY RESPONDENT)**

This trip diary section is about the trips you make on the single assigned day indicated below.

### **Before You Start:**

- Watch our video with key points to remember on your travel day (link [Trip Diary Video](#)).
- Your assigned travel day is **(INSERT DAY)** in the next week.
- We will send you an email reminder the day before.

### **Step 1. Enter Your Trips:**

- When you are ready to enter your travel diary, [\(click here\)](#).  
(IF COMPLETE: Thanks, you have completed this step; go to Step 2 when ready.)

### **Step 2. Last Step after completing travel diary:**

- Your vehicle information including odometer reading (if you have a private vehicle).
- Option to enter the Prize Draw (if eligible).
- Invitation to the City's Parking Survey (relevant for ALL residents including non-drivers).
- For this last step, [click here here](#) (IF COMPLETE: Your travel diary is complete. Thank you for participating!)

Here are some other helpful links containing information on the survey and how to complete it.

[Trip Diary Video](#)

[Study FAQs](#)

[Privacy](#)

[Prize Draw/Rules](#)

[Contact Info](#)

[View or Print 'Diary TRIP TRACKER'](#)

Note that these links will open in a new browser tab.

To return to the survey, simply close the tab.

### TRIP BEHAVIOUR (Monday to Friday only)

The City needs to understand residents' transportation choices each time they make a trip within or through the Lower Mainland. Please watch this quick video on how to fill in the trip diary: [Link to Trip Diary Video](#)

In this survey, we are asking about all of your trips taken on [INSERT ASSIGNED DAY] between midnight and 11:59 p.m. (a full 24 hour day).

**PROGRAMMER NOTE: INSERT THIS TEXT IF DRIVES OR MAKES DELIVERIES AS PART OF JOB (PROFILING AND GENERAL TRANSPORT QUESTION 3 = YES):**

Please remember to exclude trips you make as part of your job (i.e. driving a bus, taxi or commercial vehicle), but do include trips to and from work as well as any other personal trips you make.

### DEFINITION OF A TRIP (ON FIRST SCREEN – HAVE AS LINK OR DROP DOWN ON EVERY OTHER TRIP SCREEN)

**A trip is** travel from one location to another location for a purpose.

- **Include trips made by all means (walking, cycling, transit, car, etc)**
- **Include short trips** (e.g., stopping at a coffee shop, a gas station or dropping someone off)
- **Include return trips** (e.g., going home)
- **Include recreational outings that end at the same place they started** (e.g., dog walking, going for a walk or jogging)

T1. Did you make any trips that started and ended on [INSERT ASSIGNED DAY], between midnight and 11:59 p.m (a full 24 hour day)?

1. No, stayed home or was out of town for the whole day → SKIP TO VKT SECTION
2. Yes

## 1. Trip 1

- a) What was the **starting location**? If this trip started from home or work, please click “Home” or “Work”. Otherwise please enter ONE of the following for your start location:

- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

- b) What was your **end location**? If this trip ended at home or work, please click “Home” or “Work”. If this is a recreational trip where your start and end locations are the same, please select that response. (Examples of recreational trips are dog walking, jogging, etc)

Otherwise please enter ONE of the following: for your end location

- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

☐ Same as origin (a recreational trip such as walking, dog walking or jogging where you start and end your trip at the same location)

Address: \_\_\_\_\_

Nearby cross-streets: \_\_\_\_\_ and \_\_\_\_\_

Landmark: \_\_\_\_\_

Municipality:

1. Vancouver
2. Burnaby
3. Coquitlam
4. Delta/Ladner/Tsawwassen
5. Langley/Langley Township/Fort Langley/Aldergrove
6. Maple Ridge
7. New Westminster
8. North Vancouver
9. Pitt Meadows
10. Port Coquitlam
11. Port Moody/Anmore/Belcarra
12. Richmond
13. Surrey
14. West Vancouver (including Horseshoe Bay/Lions Bay)
15. White Rock
16. All Other Locations Ending Outside of Metro Vancouver

(NEW SCREEN: GOOGLE MAP WITH PIN POINT OF LOCATION. Confirm: Is this the correct location? IF YES: **INSERTION OF LAT-LONG FROM GEO-CODER**. IF NO, RETURN TO END LOCATION SCREEN FOR RE-ENTRY/REVISION OF LOCATION DETAIL)

- c) What time of day did you start this trip?
1. 12:00am to 5:59am
  2. 6:00am to 8:59am
  3. 9:00am to 11:59am
  4. 12:00pm to 2:59pm
  5. 3:00pm to 5:59pm
  6. 6:00pm to 8:59pm
  7. 9:00pm to 11:59pm
- d) IF RESPONSE "Same as origin" IN b) ask: Approximately how long was this recreational trip?
1. Less than 10 minutes
  2. 10 to less than 20
  3. 20 to less than 30
  4. 30 to less than 40
  5. 40 to less than 50
  6. 50 to less than 60 minutes
  7. 60 minutes or more
- e) What was the main **purpose** of this trip? ONE RESPONSE ONLY AUTO CODE AS "Recreation" IF RESPONSE "Same as origin" IN b)
1. To work
  2. During work/business trip
  3. To school
  4. Shopping
  5. Dining/restaurant
  6. Recreation (including dog walking, jogging, etc)/social/entertainment
  7. Personal business (e.g. bank, doctor, etc)
  8. To drive someone/drop-off/pick-up
  9. To go home
- f) How did you travel to this location? Choose all that apply. If more than one, list in order of use.  
If you walked and used other modes, select "walked as part of the trip" as well as the other modes.
1. Private car, truck, or van as a driver
  2. Private car, truck, or van as a passenger
  3. CAR SHARE as a driver (ex Modo, Car2go, ZipCar, etc)
  4. CAR SHARE as a passenger (ex Modo, Car2go, ZipCar, etc)
  5. Transit bus
  6. SkyTrain (Expo, Canada and Millennium Lines)
  7. West Coast Express
  8. SeaBus
  9. HandyDART
  10. School bus
  11. Other bus
  12. Walked/jogged the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
  13. Walked/jogged as part of the trip
  14. Bicycle
  15. Taxi
  16. Other (specify) \_\_\_\_\_

AUTO CODE AS "No", IF RESPONSE "Same as origin" IN b)

g) Was this trip a stop along the way to your next location? (e.g. a short trip such as a drop off, gas station, coffee shop, etc.)

1. Yes → Did you pre-plan to make this stop? 1. Yes 2. No  
 2. No

h) Aside from any travelling companion(s) that may have been with you on this trip, did you engage in friendly interaction with anyone (e.g. with a neighbour, vendor, friend, transit rider, transit driver, or stranger)?

1. Yes 2. No

**TRIP SUMMARY:** Please review the information you have provided for this trip.

INSERT

START LOCATION  
 END LOCATION  
 TIME OF DAY  
 MAIN PURPOSE OF TRIP  
 METHODS OF TRAVEL

Is this information complete?

1. Yes  
 2. No (RETURNS TO REVIEW AND EDIT THE TRIP)

Do you have any other details or comments about **this trip** that you would like to provide? If you have no additional comments, click NEXT to continue.

**COMMENT BOX PROVIDED**

h) Did you make another trip on this day before 11:59pm? (Remember to include return trips.)

1. Yes  
 2. No (last trip of the day) → IF LAST RIP DID NOT RETURN HOME, ASK i)

i) Did you return home before 11:59pm on this travel day?

1. Yes - Please record the details of this trip  
 2. No - Did not return home on this day → **SKIP TO SECTION 2**

**Trips 2-15: REPEAT TRIP QUESTIONS STARTING WITH....**

b) **Destination:** Where did you go next? ALL OTHER QUESTIONS SAME AS ABOVE

**AFTER LAST TRIP OF DAY, TOTAL TRIP SUMMARY:** Please review your trips below. Are your trips complete?

INSERT TRIP SUMMARIES

TRIP	FROM	TO	PURPOSE
1	ADDRESS	ADDRESS	PURPOSE
2	ADDRESS	ADDRESS	PURPOSE
3, etc	ADDRESS	ADDRESS	PURPOSE

1. Yes  
 2. No (**RETURNS TO REVIEW AND EDIT THE TRIP**)

**VKT SECTION**

**PROGRAMMER NOTE: IF PRIVATE VEHICLE CHOSEN IN RECRUIT PROFILING AND GENERAL TRANSPORT SECTION (Q2), ASK Q1-2**

1. What type of private vehicle do you typically drive?

**INSERT IF COMMERCIAL DRIVER IDENTIFIED IN RECRUIT PROFILING & GENERAL TRANSPORT SECTION (Q3)**

This is the vehicle typically driven for your personal trips. If you typically use a commercial vehicle for your personal trips, select that vehicle from the list below.

**DROP DOWN MENUS AS PER NRCAN DATASET**

**AS NRCAN LIST ONLY INCLUDES PASSENGER VEHICLES, ALLOW OVERRIDE**

**MAKE**

**MODEL**

**YEAR**

2. It is important for the City to understand how many kilometers residents are driving in a year. Please record the current odometer reading for this vehicle (to nearest 100km's). If unsure, you may check the vehicle and return to enter later. \_\_\_\_\_ km's

**IF EMPLOYMENT SCREENER = STUDY EMPLOYEE, GO DIRECTLY TO PARKING SURVEY OPT-IN**

**PRIZE DRAW, PARKING SURVEY OPT-IN & CLOSING SCREEN**

In appreciation of your participation, we will enter you into a draw to win passes to City facilities and attractions such as:

a 3 month Flexipass – providing unlimited admission to any Park Board pool, fitness centre, or rink in the City during the validity period (Value \$121)

or

a 1-year Premium Membership to the VanDusen Botanical Gardens, providing the member and a guest free entrance year round (Value \$112)

or

a PNE PlayLand PlayPass for two – a one day pass providing access to over 30 rides and attractions.

In all, approximately a 1-in-15 chance to win.

1. Yes, please enter me into the draw

2. No, thank you

Note that prize draw winners will be contacted once the study is complete.

**PARKING SURVEY OPT IN:**

1. Before submitting your survey, the City is recruiting residents to participate in a one-time, brief survey about parking – likely in early 2015. We'd like your feedback, regardless of what modes of transportation you use or whether you own a vehicle. In appreciation of your participation, the parking survey would also have similar prize draws. Please indicate your interest by clicking the appropriate response below:

1. Yes, I will participate

2. No thanks

**CLOSING:** This completes our survey. Thank you very much for your input and interest in this annual trip diary survey! We'll be in touch next year at this time!